Australian Consumers' Association

August 1992

CHOICE

CAR RELIABILITY SURVEY

Will your car break down?

THERE'S A HOLE IN THE OZONE LAYER

With what shall we fix it?

ZAPPING YOUR FOOD

Do you want your food preserved by irradiation?

TESTS

Drained weight of canned foods

Electric frypans

CHOICE

The magazine of the Australian Consumers' Association ACN 000 281 925
Council Member of the International Organization of Consumers' Unions

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Market statistics provided by GFK Marketing Services Pty Ltd.

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All products tested are bought by ACA's anonymous buyers the way consumers normally do. No samples are accepted. Ratings and conclusions are based on laboratory tests, user tests and/or expert judgments.

Our findings cannot be applied to models other than those included in reports. We do not necessarily test every product available in any particular class of goods. Because the quality of goods can vary or be varied, test results are not infallible. We put a lot of effort into double-checking and getting the facts and test results right. If a mistake slips through, we publish a correction as soon as possible. However, information also dates. If this issue is no longer current when you want to use its advice, call our Information Service to check whether changes have taken place before buying.

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Editorial

MAGAZINE PRICES will be going up, compliments of Australia Post.

For many years, magazines and newsletters have been carried at concessional postage rates as part of Australia Post's Registered Publications Service. Available to both commercial and non-profit publications, it has provided an equitable way of satisfying the information needs of people all over the country. It is particularly appropriate for non-commercial publications like those from community, church, aid and charity groups — all of which act as important alternatives to the mass media.

Australia Post, however, claims it is losing money on Registered Publications — some $20 million per year by its calculations — and that other postal users should not have to subsidise the service.

As a result, Post has received permission from the federal government to replace the service with a new system of pricing based on volume and distance.

Leaving aside arguments on the claimed loss (which many people are sceptical about), there are serious concerns about the new 'Print Post' system.

Publication mailing costs will increase for most organisations — often dramatically. At the Consumers' Association, we may face increases of around $100 000 per year — even up to $200 000 — which will be very hard for us to absorb. This is a 17% increase at least, when inflation is running at 2%!

Not only this, but Australia Post will be charging more to mail to the country — a departure from previous policy which runs the risk of disadvantaging rural consumers.

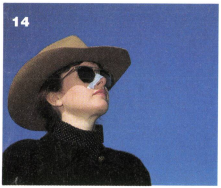
Australia Post made an after-tax profit of $122 million last year, and paid the government a 'dividend' of $25 million. In endorsing Print Post's steep price increases, the government is basically demanding an even greater dividend for its own Treasury coffers.

But at what cost to the community? What about country people? And what effects will it have on access to the flow of diverse information that is so vital in a healthy democracy? Is this really the way to create 'one nation'?

Louise Sylvan
Manager, Policy and Public Affairs

VOLUME 33 AUGUST 1992 NUMBER 8

Cover photo: Kent Mears



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The title says it all — it's three years since we last did a survey, yet Australian-made cars haven't improved their reliability.

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24 Buy it and try!
What is that elusive 'quality' you're in theory paying for when you buy more expensive goods? Cheaper products may sometimes give you what you want.

35 Irradiation — food for thought
Preserving food by irradiating it is at present not allowed in Australia, but at the end of 1992 the subject comes up for discussion again. Do we really need it, and — perhaps even more to the point — do we *want* it?

Tests

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How much actual food do you get in a can once you've drained off the liquid? We checked out a few hundred cans and found considerable differences.

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The Hills Hoist of the suburban kitchen, an electric frypan can be found in the majority of Australian homes. The years have brought only one significant change: most of them now have non-stick surfaces.

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October, November, December

Tests: Air conditioners, bicycle helmets, secateurs, yoghurt, cordless phones, food processors, stain-resistant carpet, computers, frozen desserts, water filters, in-line skates.

Features: Pay TV; economic jargon explained; fuzzy logic; the greenhouse effect — what's being done; allergies; health insurance; vet fees; pool fences; indoor air quality; credit cards.

Pests

SOME THINGS NEVER CHANGE (BUT WE WISH THEY WOULD)

EXERCISE VIGILANCE when dealing with pest control companies — broadly, that's our advice to consumers after a survey we carried out found pest control organisations giving quotes for unnecessary treatment.

A quiz for readers: when was the above paragraph written?

It could have been earlier this year, when our survey of pest inspections found the quality of work done in many cases to be lamentably bad. As well, preventive treatments are often recommended when they're not necessary.

It could have been written a bit less than 10 years ago, when a similar CHOICE survey came up with similar findings (reported on in CHOICE, September 1983).

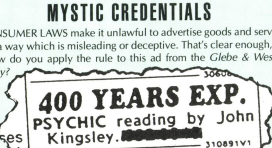
In fact it first appeared almost 30 years ago, in the June 1963 issue of CHOICE. Then, a survey found the presence of powder-post (Lyctus) borer, in particular, prompted recommendations and quotes for treatment not actually required. Following up these "objectionable practices" in the July 1963 issue, CHOICE advised: "Inspect reports carefully and demand full details of any written quotations."

There are other findings in common between the three reports – for instance, the variations found in the time taken to carry out inspections (with the winner for brevity a company in the 1983 survey, which took a ridiculous seven minutes and 27 seconds to conduct a supposedly thorough inspection) and in the quality of the advice provided to householders.

We can only hope the changes promised by the industry at the time of our last report mean that by the time of our next one, things really will be different.

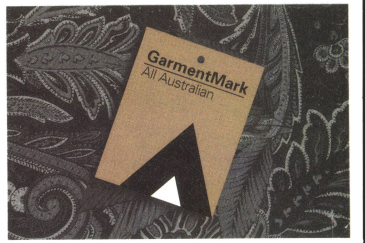
MYSTIC CREDENTIALS

CONSUMER LAWS make it unlawful to advertise goods and services in a way which is misleading or deceptive. That's clear enough, but how do you apply the rule to this ad from the *Glebe & Western Weekly*?



Clothing quality

DIOR, GUCCI, CHANEL – WHO NEEDS THEM?



THE NEW label to look out for isn't that of some overpriced overseas designer — instead, it's the all-Australian GarmentMark, launched earlier this year by Minister of Industry, Technology and Commerce John Button.

The Australian GarmentMark is a performance-based certification scheme for the clothing and textile industry. Manufacturers can apply for certification and, if they're found to meet the required quality standards and their garments are made in Australia, are then licensed to use the scheme's logo on their products. The scheme currently operates in two tiers: the Gold GarmentMark is for all-Australian garments — which includes local yarn and textile manufacture — while the Silver GarmentMark is for garments manufactured in Australia but which use wholly or partly imported materials.

The specifications for the scheme — which cover areas such as care labelling, colour fastness, stretch and recovery properties, pilling of wool or polymer fabrics and strength — were put together by Standards Australia, which has now handed over responsibility for it to its subsidiary, Australian Design Award. But according to Jack Moncrieff, media and communications manager for Standards Australia, the driving force behind the GarmentMark's inception was John Button, who saw it as a way to lift the quality of Australian-manufactured garments.

Industry interest in the scheme has been high, says Moncrieff; though no companies have yet been licensed to use the logo, a number of applications are being processed at the moment. Once a manufacturer has begun using the GarmentMark — so there's "something to show" — the scheme will be promoted beyond industry to the general public, he says.

It's not clear yet whether adoption of the GarmentMark will be pushed along by manufacturers, retailers or consumers. Just one major retailer telling manufacturers it will only stock their products if they carry the GarmentMark could drive the scheme a long way; similarly, consumers letting retailers know they look for the GarmentMark when they buy should have an impact.

Basically, Moncrieff says, the GarmentMark is for those people who in response to 'Buy Australian' promotions reply, "Why should we? It's no good." Schemes such as this, which provide an assurance of quality along with the 'all-Australian' pedigree, should help turn that around, he says.

FOOD ADULTERATION WORRIES FOR NSW

FOOD manufacturers who water down fruit juice to make it go further, and butchers who use sulphur dioxide to disguise the smell and appearance of decaying meat, will most likely go undetected under new policy directives by the NSW health department.

In future, all consumer matters such as food adulteration, misleading labelling and even isolated outbreaks of food poisoning may not be investigated.

Instead the present centralised system of food inspection will be disbanded, and matters of food inspection will be left to individual health regions and local councils. The department has said only matters of public health will be investigated, and prosecutions will be at the sole discretion of the individual authority.

However, at least two health boards have said prosecutions are not worth the effort — even in the public health arena — and that there are more important health projects than food inspection to spend budgets on.

Under the new scheme it will be left to each health region to decide how many, if any, food inspectors it wishes to employ.

The situation will be similar to that in England and Wales, where food regulation is left to the local authorities. There, environmental health officers have to be generalists, rather than specialists, and as a result are likely to be outgunned technologically and legally when trying to defend a complaint against a food manufacturer or retailer who can afford the best legal advice.

A single local authority can seldom afford to challenge a large company because of the differences in financial resources.

As in England, local authorities in NSW will also be faced with the problem caused by the creation of boundaries — a manufacturer or retailer will invariably operate across several boundaries. This will slow investigations considerably as each authority gets involved. More worrying, say the inspectors, should any one chief executive officer deem the complaint to be not worth the exercise, the action could be stonewalled indefinitely. This raises the question of vested interests and corruption at a local level, and is one that has not yet been resolved.

In 1991 alone, food inspectors won 483 prosecutions for adulterated food, including arsenic and cadmium in seaweed, illegally added sulphur dioxide in meat (which can cause severe allergic reactions), illegally added preservatives in a range of foods, insects and foreign matter in food, oysters contaminated with faecal coliforms, and in one case, an adhesive plaster in uncooked manufactured meat.

In one factory dichlorvos (a long-lasting surface pesticide) was found in biscuit base, breadcrumbs, coconut topping and bay leaves.

Under the new policy such prosecutions are unlikely to be authorised.

The NSW department of health has not provided details of how it will overcome predicted problems — one public health unit director confessed only days before the announced changeover that he had received nothing in writing from the department and did not know how the scheme was going to work.

The department would only confirm that it could not command public health directors to take up matters of adulteration, monitoring and misleading or faulty labelling, and that each unit could operate autonomously.

Consumers who are worried about the unwillingness of the NSW government to allocate resources to the monitoring and enforcing of food and labelling regulations should write to Ron Phillips, Minister for Health, Parliament House, Sydney 2000. We suggest you also mail a copy to the NSW Premier. We understand the Premier's office is keeping an eye on the public's response to these changes.

SKIPPING ON SALT

I DON'T COOK with salt, so I don't eat much of it."

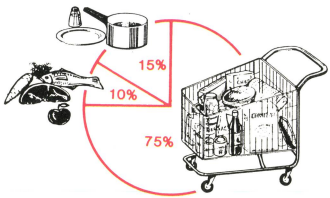
That common statement is the type of misconception the consumer group Salt Skip is trying to put straight. Many people don't realise that three quarters of salt eaten is in what we bring home from the supermarket.

Salt is implicated in high blood pressure, a condition affecting one in six Australian adults and around half the population over retirement age. High blood pressure can contribute to heart attacks and to strokes, the third most common cause of death in Australia. "But people, both professionals and the public, know very little about salt," says Dr Trevor Beard, senior research fellow at Menzies Centre for Population Health Research.

Salt Skip is dedicated to helping people cut down on salt. Its two-monthly newsletter provides recipes with reduced salt; information on the salt content of biscuits, cereals and sauces; and other health information. It also points out new reduced-salt manufactured products, such as those in Coles New World's FARMLAND **No Added Salt** range, which includes fish fingers, nuts, tuna and tomato juice.

Salt Skip is totally funded by membership fees, which are $18 or $15 for pensioners and students. On joining, members receive a number of brochures and booklets including *High blood pressure? One problem may be salt*, a Salt Skip shopping guide and *The Key to Avoiding Salt*.

For more information contact Dr Trevor Beard, Salt Skip, GPO Box 1717, Hobart 7001.



DID YOU KNOW ...?

THE WRONG TIME to order fresh local oysters is during and immediately following flooding and heavy rains.

Oysters are grown in estuaries, where they feed by pumping large quantities of water through their digestive systems and filtering particulate matter from the water. Consequently they are likely to concentrate any water-borne contaminants and harmful micro-organisms in their flesh.

In times of heavy rainfall the estuaries frequently become contaminated with rural and industrial chemicals, animal faeces, and discharge from septic tanks and overloaded sewage systems. In turn, the oysters feeding in these waters become contaminated.

To minimise the number of food poisoning outbreaks, the industry is required to purify oysters before opening them — which means keeping them for 36 hours in a tank of sterilised water. As the oyster pumps the clean water through its digestive system it empties itself of most pathogens.

One of the biggest concerns is that, to work well, the system depends on the oyster feeding normally. Unfortunately, at a time when the contamination is likely to be at its highest levels — that is, after heavy rainfall — the subsequent flooding of the estuary can send the oysters into shock because they can't cope with the sudden low salinity. Oysters harvested at this time will not feed in the purified water and will remain contaminated.

Oyster buffs be warned. During and after periods of prolonged heavy rain, order something else from the menu. Bon appetit!

Not very plain English

NONE THE WISER

RK of South Australia has sent us some very odd instructions for an imported Korean toy car given to his daughter.

The assembly instructions include a direction to *"Fully insert the handle into the hole of main body backward on an average"*, a "WARNING" that *"This product is assembly one, according to, when you use this one, please assemble."* And a guide to the car's use including, *"On the occasion of using it as push car for the toddling baby near about 12months since born, the leg comes in contact with the car's speed and accordingly the baby may be overturned."* Luckily, despite these instructions RK's daughter has avoided injury.

Strangely enough there's no requirement for a manufacturer to provide any instructions at all — let alone in English. And although toys can be banned on safety grounds (and the instructions supplied would be looked at for their effect on product safety), imports aren't subjected to checks unless they're brought to the attention of a state Consumer Affairs Department. So if you're buying something for which you think you might need instructions, do check before you buy. And if you come across a real horror please send us a copy.

If you find a toy you suspect is dangerous, contact your state Consumer Affairs Department; they should take steps to test the product and see it is banned if they agree.

CAN YOU HELP?

HOUSE AND CONTENTS INSURANCE

WE ARE planning a feature on house and contents insurance — can you help? We'd like to hear about any problems, difficulties or good experiences you've had with this type of insurance.

- Were there problems taking out the insurance? What happened?
- If you've made a claim in the last couple of years, how did it go? Were there any surprises? How long did it take to get the claim paid?
- Have you any advice for others about to buy this type of insurance?

In all cases, please identify (a) the name of the insurance company, (b) the address (suburb/town and state) of the house covered by the insurance, and (c) please provide your name and a business hours phone number so we can check with you if necessary.

Please write to: **House and contents insurance**, CHOICE, 57 Carrington Road, Marrickville 2204. It would help with our research if your letter reached us by September 30.

Thanks for your help.

CORRECTIONS

DISPOSABLE NAPPIES

(Letters, CHOICE, March 1992)

In our answer to a letter about disposable nappies on page 46, we stated that the problem of groundwater contamination from nappies buried in landfills had been recognised in countries with a high usage of disposable nappies. Evidence since presented to us indicates that in well operated landfills, disposable nappies have not been documented to be a problem. We shall be thoroughly researching this aspect in a report on nappies planned for next year.

SMALL MICROWAVE OVENS

(CHOICE, June 1992)

The correct model number of the **NEC** oven reported on is **N536 WD**. It was listed with the wrong model number on pages 30, 31 and 32.

Aluminium

THE ACID TEST

A STUDY HAS SHOWN that canned soft drinks are likely to contain nearly five times as much aluminium as bottled drinks, and more than 20 times as much as local tap water.

A research team led by Dr John Duggan of the John Hunter Hospital in Newcastle, NSW, analysed the contents of 106 canned and bottled drinks comprising 52 types of beverage, and found the drinks in cans had significantly higher levels of aluminium.

Theoretically, aluminium should not be able to leach into soft drink because of the protective lacquering on the inside of the can. However, if there were any imperfections in the lacquer the acid in the drinks would begin to eat into the aluminium walls of the can. The more acidic the drink, it seems, the higher the aluminium level.

Beer in aluminium cans showed similar levels to that in glass bottles, but canned cola drinks — which are basically flavoured phosphoric acid — contained more aluminium than the beer. Lemonade-type drinks containing citric acid had the highest aluminium levels.

The National Health and Medical Research Council has specified a maximum level for aluminium in drinking water as being not more than 0.2 mg per litre.

The samples of tap water analysed in the study were within this guideline, containing an average of 0.04 mg per litre, and the bottled drinks contained an average of 0.18 mg. However, the canned drinks contained on average 0.84 mg per litre.

One can contained the equivalent of 10.4 mg per litre of aluminium — 50 times the limit recommended for water!

While there's no conclusive evidence that ingesting large amounts of aluminium is harmful, if you want to reduce your intake, stick to bottled drinks. See *Aluminium — Is there a Risk?* in CHOICE, January 1992, for more information.

Insulation

FIBREGLASS VS CELLULOSE

VICTIMS OF FIBREGLASS', a US-based campaign to raise doubts about the safety of fibreglass insulation, continues. We addressed this debate in CHOICE, January 1990, and after checking yet again, stand by what we wrote then (and before).

The risk of lung cancer as a result of exposure is regarded as a potential problem for *workers* in the industry who are constantly handling or manufacturing the product — not for individuals who may handle and install fibreglass insulation only once in their homes.

On the other hand, consumers wishing to install cellulose insulation are faced with other questions: cellulose needs to be installed by a contractor, is more prone to breakdown (a leak in the roof may affect it), and if not treated with sufficient fire retardant can become a fire hazard.

The NSW Products Safety Committee is holding an enquiry into the safety of cellulose fibre as an insulation material, and will report to the minister later this year. We will include its findings in our report on insulation in March 1993.

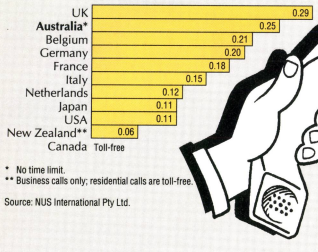
SHOPPING AROUND

TALKING BACK

When you're overseas, you're likely to want to post letters and make phone calls. Here's what you can expect to pay.

LOCAL TELEPHONE CALL

The cost of a three-minute call (unless otherwise stated).

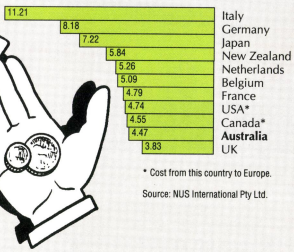


* No time limit.
** Business calls only; residential calls are toll-free.

Source: NUS International Pty Ltd.

INTERNATIONAL TELEPHONE CALL

The cost of a three-minute call to the US.

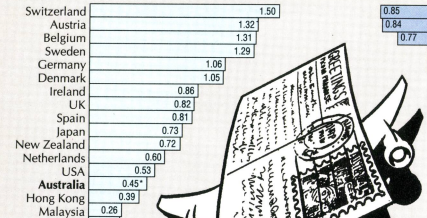


* Cost from this country to Europe.

Source: NUS International Pty Ltd.

POSTCARD TO AUSTRALIA

What it will cost to send a postcard without an envelope.

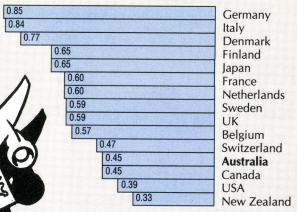


* Within Australia

Source: ACA research.

DOMESTIC LETTER RATE

The cost of sending a letter within the same country.



Source: Australian Postal Corporation.

All prices are in Australian dollars (rounded to the nearest cent), based on ANZ bank rates, January 2, 1992, for phone calls; and exchange rates quoted in the *Australian Financial Review*, June 25, 1992, for mail rates.

• CAR RELIABILITY SURVEY •

Aussie cars disappoint again

It's over three years since we last reported on car reliability but it's still the same old story.

RELIABILITY BY NUMBERS

OUR DEFINITION of a reliable car is one that didn't break down during the year and didn't have to spend any time off the road for repairs (other than crash repairs or maintenance). That is, whenever you needed the car it was available.

Our definition of a significant problem area is one that affected more than 50% of the cars in any model sample. In other words, you are more likely than not to have trouble in that particular area — see *Problem areas* on page 12 for details.

WITH THE economy still on its knees, we would have liked to bring you some good news about the reliability of Australian-made cars — but our latest survey shows the local product is nearly twice as likely to break down or spend time off the road for repairs as imported vehicles.

Importers such as Mazda, Honda, Daihatsu and Subaru have shown us it is possible to build cars that can stand up to 'tough Aussie conditions'. Particularly disappointing is General Motors Holden. Nearly half the cars in our survey built by GMH in Australia between 1989 and 1991 were forced off the road with problems last year.

RECENT CARS (1989-91)

Since we have not surveyed car reliability since 1989, none of these recent cars has been reported on before. All manufacturers have had a chance to lift their game since then. So is there one that stands out or should you stick to your trusty old Goggomobile?

The most reliable Australian-made car in our survey was the four-cylinder **TOYOTA Camry 4**, which was roughly comparable to the average imported car. The **FORD Laser** and **NISSAN Pulsar GL 1.6** weren't far behind, and the new **MITSUBISHI Magna** also performed well.

Toyota and Mitsubishi were the best performers among the Australian manufacturers. Seventy-nine per cent of cars made by Toyota in Australia from 1989 to 1991 ran trouble-free last year. This compares well with imported Toyotas, for which the figure was 84%, and the overall figure for imports of 84%.

The 79% figure includes the **HOLDEN Apollo** and **Nova** (made by Toyota) but not the **TOYOTA Lexcen** (made by Holden). If you only consider the name on the cars, the reliability of new Australian-made Toyotas drops to 75%. See *Australian made*, right, for more details of who made what. Now Toyota and GMH have officially formed a joint venture, one of the first things they may want to look at is the difference in reliability between their respective vehicles.

The Mitsubishi situation isn't quite so convoluted. At the moment it produces just two cars in Australia, the **Magna** and **Verada**. The new **Magna TR**, which was launched last year with much fanfare and pleas for consideration, was more reliable in this survey than the older model, although that difference in age could be reason enough for the improvement. We'll have to wait and see.

Nissan sits in the middle; more reliable than the Fords or the Holdens but

not quite up with Toyota and Mitsubishi. From the end of October, it will be shutting down its Australian manufacturing plant but will continue to import vehicles.

We discovered nine major problem areas in cars — see *Problem areas*, beginning on page 12 — and they reflected the overall difference in reliability between imported and Australian cars. For the 1989-91 cars, we found Mazdas in general (all imported) had less than half the average problem rate in all categories except body integrity and brakes — and even there the problem rates were lower than average. Honda (also imported) performed better than average in all major problem areas, and Subaru (imported) and Toyota also generally came out better than average.

Holden performed much worse than average in the areas of body hardware, body integrity, electrical system, engine cooling, rust and steering. Ford was much worse than average for engine cooling and steering, and Nissan for exhaust problems.

The survey

Survey forms were sent out to all subscribers in the January issue of CHOICE. From your replies we got details of over 8400 cars, covering 37 makes and 175 models. Unfortunately, many of these weren't in significant enough numbers to include in our tables. We restricted our list of how the makes compare (Table 1) to those with 40 or more cars in an age group, and our comparison of models (Table 2) to those with 20 or more cars in an age group.

The 8400 cars in our survey aren't entirely representative of all Australian cars. The average car in our sample was around six years old, much less than the estimated 10 years for the Australian fleet. When comparing the types of recent cars in our survey with the overall national sales profile, Subaru, Mazda and Honda were more popular with our subscribers than in the country as a whole, while Fords and Holdens were relatively unpopular.

This could be a response to the results of our past surveys (Honda, Mazda and Subaru have traditionally performed well in these), or maybe CHOICE readers are just a little bit more discerning to start with. Our first car reliability survey in August 1982 found CHOICE readers then were driving more Hondas, Mazdas and Volvos than the norm.

So can we justify our results? Is a sample of 20 cars big enough to praise or damn a model? There may be thousands of those cars in Australia; how do we know we haven't just got a good (or bad) bunch? We would love to have more cars in our samples, but even so our results correspond well with other surveys (by ourselves and others) and between the different age groups in this survey.

Australian made

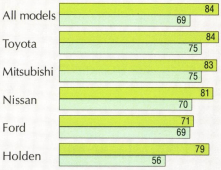
WE COMPARED the reliability of the cars made in Australia between 1989 and 1991 with imports of the same maker and imports overall. The Australian-made cars were:

- **TOYOTA — Camry 4, Corolla** (except 4WD wagon), **Lexcen.**
- **MITSUBISHI — Colt, Magna, Verada.**
- **NISSAN — Pintara, Pulsar, Skyline.**
- **FORD — Capri, Corsair, Fairlane, Falcon, Laser** (except **TX3 Turbo** and **Turbo 4WD**).
- **HOLDEN — Apollo, Astra, Commodore, Nova.**

Some of these models are 'twins' of other models in the list. For instance, the **TOYOTA Lexcen** is equivalent to the **HOLDEN Commodore** and is made by GMH, and the **HOLDEN Nova** and **Apollo** are the same as the **TOYOTA Corolla** and **Camry** respectively, and are made by Toyota. The **HOLDEN Astra** is a **NISSAN Pulsar** and the **FORD Corsair** is off the same line as the **NISSAN Pintara.**

We have included models in the graph below by badge name, not by name of the actual maker. When you adjust the figures for this, the reliability of cars made by Toyota in Australia increases to 79% and the reliability of cars made by GMH in Australia drops to 52%. The other figures stay the same.

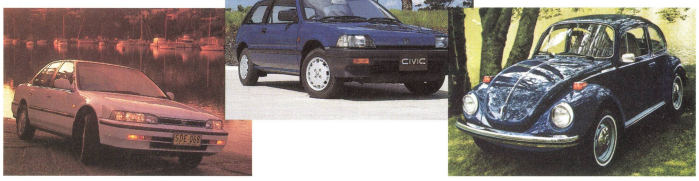
% of 1989–91 sample with no problems



Best and worst

The HONDA Accord is one of the top three most reliable cars in every age group this survey. While Honda and Mazda have consistently featured as the most reliable manufacturers over the years, Ford and Holden have consistently performed poorly.

Toyota is another manufacturer that has been consistently reliable, yet the TOYOTA Lexcen is the least reliable



The Honda Accord (left) topped the list for reliability in three age groups: 1989-91, 1986-88 and 1980-82. The other two winners were the Honda Civic (1983-85) and the trusty old Volkswagen Beetle (pre-1980).

1989/91 car in our survey. Is it any surprise to find the **Lexcen** is not made by Toyota but is actually a **HOLDEN Commodore**?

How to use this survey

You can use the results of this survey to help you when buying a car or just as a reference when maintaining your current car. Table 2 lists car models in different age groups in order of their reliability, and in *Problem areas* we list cars that experienced significant problems in certain areas.

When buying a car, first look at Table 2 to get a feel for whether the model you are considering is likely to have many problems or not. Then have a look at *Problem areas*. If it features in a particular list (say brakes), pay particular attention to that area when examining the car. The same goes for maintaining your car — keep an eye on noted problem areas.

RELIABILITY OF MODELS

As noted already, the disappointing thing about Table 2 is the position of Australian-made models in it. For the 1989-91 cars, the bottom 11 are all Australian-made, as are the bottom 10 for 1986-88 and the bottom six for 1983-85 models.

It's interesting to see that the old **HOLDEN Belmonts, Kingswoods** and **Premiers** are very reliable for their age. One theory to explain this is that they are moving into the much-loved-old-banger category and their owners are taking much more care with their maintenance. Other theories might speculate about what GMH was doing then that it isn't doing now. The old-banger theory might also apply to the **VOLKSWAGEN Beetle**, although it has long featured as one of the more reliable cars in our surveys.

While the stand-out model has to be the **HONDA Accord**, other consistent models over different age groups are the **HONDA Civic, MAZDA 323** and **626** and **TOYOTA Camry** and **Cressida**.

There were only 12 **FORD Capris** in our survey so it didn't qualify to be included in the table. However, because of media coverage of its early model as a 'lemon', its performance is worth a mention. Seven of the **Capris** (58%) in our survey had no breakdowns or days off the road for repairs during 1991, ranking it with the **HOLDEN Commodore V8**. When looking at specific problem areas, eight **Capris** had a problem with body hardware, seven with body integrity and seven with the interior trim — areas that have been drawing complaints from disgruntled **Capri** owners.

Table 1. How the makes compare

1989-91	Percentage of sample with no problems
MAZDA	93
HONDA	91
DAIHATSU	88
SUBARU	86
TOYOTA	79
MITSUBISHI	78
NISSAN	74
FORD	69
HOLDEN	61

1986-88	Percentage of sample with no problems
HONDA	85
MAZDA	76
TOYOTA	72
NISSAN	70
MITSUBISHI	58
HOLDEN	57
FORD	56

1983-85	Percentage of sample with no problems
HONDA	70
MAZDA	62
SUBARU	53
TOYOTA	53
MITSUBISHI	48
NISSAN	45
FORD	41
HOLDEN	41

1980-82	Percentage of sample with no problems
HONDA	65
MAZDA	55
TOYOTA	50
FORD	48
MITSUBISHI	46
HOLDEN	39
NISSAN (DATSUN)	35

pre-1980	Percentage of sample with no problems
TOYOTA	50
HOLDEN	46
HONDA	46
VOLKSWAGEN	45
MAZDA	44
MITSUBISHI(CHRYSLER)	39
NISSAN (DATSUN)	39
VOLVO	38
FORD	34

Table 2. Reliability of models

1989-91 models (sample no)	% without problems
Honda Accord (21)	100
Toyota Camry V6 (20)	95
Mazda 626 FWD (69)	94
Subaru Liberty (75)	91
Daihatsu Charade 1.3 (31)	90
Honda Civic (38)	90
Mitsubishi Lancer (36)	89
Mazda 323 FWD/Astina (62)	89
Hyundai Excel (26)	89
Holden Barina (37)	87
Nissan Patrol (51)	86
Toyota Cressida (35)	86
Mitsubishi Pajero V6 (24)	83
Toyota Camry 4 (148)	83
Daihatsu Applause (28)	82
Ford Laser (110)	82
Toyota Hi-Lux (22)	82
Nissan Pulsar GL 1.6 (27)	82
Subaru 4WD Wagon (42)	81
Mitsubishi Magna TR (75)	79
Toyota Land Cruiser (51)	78
Ford Telstar (35)	77
Nissan Skyline RWD 3.0 (30)	73
Nissan Pintara FWD (33)	73
Mitsubishi Magna TP (93)	72
Toyota Corolla FWD (87)	71
Holden Apollo (27)	70
Nissan Pulsar Vector/Q 1.8 (77)	68
Ford Falcon 6 EA-EB (134)	63
Holden Commodore V8 VN-VP (48)	58
Holden Commodore V6 VN-VP (173)	51
Ford Fairlane (23)	48
Toyota Lexcen (28)	46

1986-88 models (sample no)	% without problems
Honda Accord (28)	86
Ford Telstar (30)	83
Honda Civic (46)	83
Mazda 626 FWD (35)	77
Toyota Camry 4 (113)	75
Subaru 4WD Wagon (20)	75
Nissan Pintara RWD (56)	71
Mazda 323 FWD/Astina (24)	71
Holden Barina (20)	70
Ford Laser KA-KF (102)	70
Nissan Skyline RWD 3.0 (68)	68
Toyota Corolla FWD (111)	67
Hyundai Excel (24)	67
Toyota Land Cruiser (32)	66
Toyota Corona (25)	60
Nissan Pulsar/Vector Q 1.8 (25)	60
Holden Astra LB-LC (25)	60
Mitsubishi Magna TM-TP (194)	58
Holden Commodore V6 VL (117)	56
Mitsubishi Colt RA-RE (20)	55
Holden Camira JB-JE (39)	49
Holden Commodore V6 VN (32)	47
Ford Falcon 6 EA-EB (62)	47
Ford Falcon 6 XA-XF (112)	39

FWD = front-wheel drive RWD = rear-wheel drive 4WD = four-wheel drive

1983-85 models (sample no)	% without problems
Honda Civic (35)	71
Toyota Hi-Lux (27)	70
Honda Accord (46)	67
Mazda 626 FWD (86)	66
Mazda 323 FWD/Astina (61)	64
Toyota Cressida (29)	62
Toyota Land Cruiser (42)	62
Toyota Corolla FWD (39)	62
Mitsubishi L-300 (20)	60
Toyota Camry Hatch (31)	58
Daihatsu Charade 1.0 (22)	55
Nissan Pulsar GL 1.6 (26)	54
Mitsubishi Magna TM-TP (39)	51
Ford Laser KA-KF (99)	51
Toyota Tarago (54)	50
Mitsubishi Pajero 4 (29)	48
Toyota Corolla RWD (40)	48
Volvo 240 (30)	47
Ford Telstar AR-AT (59)	46
Mitsubishi Colt RA-RE (33)	46
Subaru 4WD Wagon (46)	41
Toyota Corona (78)	40
Toyota Hi-Ace/Lite Ace (21)	38
Nissan Bluebird (56)	36
Holden Camira JB-JE (43)	35
Mitsubishi Sigma/Scorpion (66)	35
Holden Commodore V8 VB-VK (23)	35
Ford Falcon 6 XA-XF (114)	34
Holden Commodore 6 VB-VK (67)	28

1980-82 models (sample no)	% without problems
Honda Accord (23)	74
Toyota Cressida (23)	74
Mazda 323 FWD/Astina (35)	63
Ford Laser KA-KF (54)	56
Subaru 4WD Wagon (26)	54
Mazda 323 RWD (28)	54
Mazda 626 RWD (38)	50
Ford Falcon 6 XA-XF (59)	48
Mitsubishi (Chrysler) Sigma/Scorpion (57)	44
Holden Commodore 6 VB-VK (77)	38
Volvo 240 (30)	37
Toyota Corolla RWD (39)	36
Holden Gemini RWD TX-RB (34)	35
Toyota Corona (35)	34
Nissan (Datsun) Bluebird (34)	32

pre-1980 models (sample no)	% without problems
Volkswagen Beetle (32)	56
Honda Accord (28)	54
Holden Belmont/Kingswood/Premier (137)	52
Toyota Corona (49)	49
Toyota Corolla RWD (53)	45
Mitsubishi (Chrysler) Valiant/Charger (31)	45
Mazda 323 RWD (36)	44
Holden Torana 6 (23)	39
Mitsubishi (Chrysler) Sigma/Scorpion (26)	35
Ford Cortina TC-TF (35)	29
Volvo 240 (32)	28
Ford Falcon 6 XA-XF (36)	28
Volkswagen Kombi (29)	28
Holden Gemini RWD TX-RB (23)	26

PROBLEM AREAS

AS PART of the survey, we asked if the car had problems with any particular area, including problems that weren't serious enough to put the car off the road. We listed 18 problem areas, and calculated the percentage of all cars in each age group that experienced some sort of problem in each of the categories.

The areas experiencing the fewest problems across all age groups and models were:

- **Clutch.**
- **Driveline** (covering everything between the gearbox and the wheels — driveshaft, differential, bearings, etc).
- **Engine** (covering mechanical faults — pistons, cylinders, rings, valves, cams, engine bearings, etc).
- **Fuel system** (covering carburettor or fuel injection system, choke, fuel filter and turbocharger).
- **Gearbox and transmission.**
- **Suspension** (including springs, shock absorbers, etc.)

Falling in the middle of the problem area stakes were:

- **Ignition system** (including spark plugs, leads and distributor). There was only one model for which more than 50% of our sample had ignition problems: the pre-1980 **HOLDEN Gemini TX-RB.**
- **Interior trim** (including seats, dashboard and general trim inside the car).
- **Paintwork:** As you'd expect, this becomes a more significant problem with older — pre-1983 — cars. Only the pre-1980 **HONDA Accord** and most pre-1980 **NISSAN/DATSUNs** in this survey showed 50% or more with paintwork problems.

The areas with the most problems across all age groups were:

- **Air conditioning.**
- **Body integrity.**
- **Body hardware.**
- **Brakes.**
- **Electrical system.**
- **Engine cooling** (except 1989-91 models).
- **Exhaust system** (except 1989-91 models).
- **Rust** (except 1989-91 models).
- **Steering.**

Below we give more details of makes and models particularly affected by these nine problem areas. A car make listed without a model name means we didn't have enough cars of any specific model in our sample to draw significant conclusions, but over 50% of the cars of that make showed problems in the particular area. Models/makes marked with an asterisk (*) indicate that while we had less than 20 models in the sample, 10 or more experienced the problem.

FWD = front-wheel drive
RWD = rear-wheel drive
4WD = four-wheel drive.

AIR CONDITIONING

Not all cars have air conditioning, so these figures are calculated on the number of cars that do (26% of our sample made before 1980 compared with 83% built between 1989 and 1991).

Percentage of cars with problems:

There were no models with problems in more than half the sample.

BODY INTEGRITY

This category covers air, dust and water leaks as well as noises.

Percentage of cars with problems:

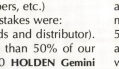
Problems in more than half of sample:

1980-82
HOLDEN Gemini RWD TX-RB
pre-1980
FORD Cortina TC-TF
FORD Falcon 6 XA-XF
HOLDEN Belmont/Kingswood/Premier
HOLDEN Gemini TX-RB
MITSUBISHI (CHRYSLER) Valiant/Charger

BODY HARDWARE

This is a fairly general category encompassing doors and windows and their fittings, locks, mirrors, and general ventilation problems. In recent cars, it was the most frequent problem our subscribers encountered. Forty-one per cent of 1989-91 **HOLDEN Commodores** and 37% of **FORD Falcons** and **Fairlanes** had some sort of body hardware problem.

Percentage of cars with problems:



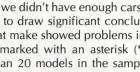
Problems in more than half of sample:

1989-91
FORD Fairlane
NISSAN Pintara FWD
1986-88
FORD Fairlane V8 ZD-ZL*
1983-85
FORD Fairlane V8 ZD-ZL*
FORD Falcon 6 XA-XF
1980-82
FORD Falcon 6 XA-XF
pre-1980
FORD Cortina TC-TF
FORD Falcon 6 XA-XF
VOLKSWAGEN Kombi

BRAKES

This includes foot and handbrakes and all aspects of the brake system including noises. In older cars it is one of the major sources of problems — possibly a result of lack of maintenance.

Percentage of cars with problems:



Problems in more than half of sample:

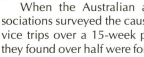
1983-85
ALFA-ROMEO*
HOLDEN Camira JB-JE
PEUGEOT*
TOYOTA Corolla RWD
1980-82
FORD Laser KA-KF
HOLDEN Commodore 6 VB-VK
TOYOTA Cressida
pre-1980
FORD Cortina TC-TF
FORD Escort*
HOLDEN Torana 6
MITSUBISHI (CHRYSLER) Sigma/Scorpion
VOLKSWAGEN Beetle
VOLKSWAGEN Kombi

ELECTRICAL SYSTEM

This includes the battery, alternator, starter motor, switches and electrical accessories, but not the ignition system. It is one of the biggest problem areas in all age groups in our survey.

When the Australian automobile associations surveyed the causes for their service trips over a 15-week period in 1990, they found over half were for problems with the battery or electrical system.

Percentage of cars with problems:



Problems in more than half of sample:

1986-88
FORD Fairlane V8 ZD-ZL*
FORD Falcon 6 EA-EB
FORD Falcon 6 XA-XF
MITSUBISHI Magna TM-TP

1983-85
FORD Fairlane V8 ZD-ZL*
FORD Falcon 6 XA-XF
HOLDEN Camira JB-JE
HOLDEN Commodore 6 VB-VK
HOLDEN Commodore V8 VB-VK
MITSUBISHI Magna TM-TP
TOYOTA Corona
TOYOTA Tarago

1980-82
HOLDEN Commodore 6 VB-VK
HOLDEN Commodore V8 VB-VK*
NISSAN (DATSUN) Bluebird
VOLVO 240

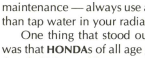
pre-1980
FORD Cortina TC-TF
FORD Escort*
FORD Falcon 6 XA-XF
HOLDEN Gemini TX-RB
MITSUBISHI (CHRYSLER) Sigma/Scorpion
MITSUBISHI (CHRYSLER) Valiant/Charger
VOLKSWAGEN Kombi

ENGINE COOLING

This includes the radiator, water pump, fan belt, fan and hoses. It becomes more of a problem in older cars, possibly due to poor maintenance — always use a coolant rather than tap water in your radiator.

One thing that stood out in the results was that **HONDA**s of all age groups had less than half the problem rate in this area than the average car in our survey. In most cases it was much less than half.

Percentage of cars with problems:



Problems in more than half of sample:

1986-88
FORD Falcon 6 XA-XF
TOYOTA Corona

1983-85
FORD Falcon 6 XA-XF
HOLDEN Camira JB-JE

1980-82
FORD Falcon 6 XA-XF
MITSUBISHI (CHRYSLER) Sigma/Scorpion
NISSAN (DATSUN) Bluebird

pre-1980
FORD Cortina TC-TF
FORD Falcon 6 XA-XF
HOLDEN Commodore 6 VB-VK*

EXHAUST SYSTEM

The exhaust system includes the muffler, manifold, pipes and rust in any of these. It also covers the catalytic converter in cars that run on unleaded petrol. After the first six years, the problem rate seems to level out at around 35%.

Percentage of cars with problems:

Problems in more than half of sample:

1986-88
HOLDEN Commodore V6 VN-VP
NISSAN Pintara RWD

1983-85
HOLDEN Commodore V8 VB-VK
MITSUBISHI Magna TM-TP
NISSAN Bluebird
VOLVO 240

1980-82
HOLDEN Commodore 6 VB-VK
NISSAN (DATSUN) Bluebird
VOLVO 240

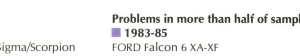
pre-1980
FORD Escort*
VOLKSWAGEN Beetle

RUST

The figures say it all really. Cars built before 1980 are 13 times more likely to have a rust problem than those built between 1989 and 1991. Of the pre-1980 cars **MITSUBISHI (CHRYSLER)** was the worst, with 83% of that make in our sample experiencing rust problems. The best was **VOLVO**, with only 46% having problems.

For the information of aficionados, none of the five **ROVER**s in this age group had rust problems, along with only one of the six **JAGUAR**s and one of the five **PORSCHE**s, but these numbers are too small to be statistically significant.

Percentage of cars with problems:



Problems in more than half of sample:

1983-85
FORD Falcon 6 XA-XF
HOLDEN Camira JB-JE
MITSUBISHI Magna TM-TP
MITSUBISHI Sigma/Scorpion

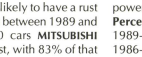
1980-82
FORD Falcon 6 XA-XF
FORD Laser KA-KF
HOLDEN Commodore 6 VB-VK
HOLDEN Gemini RWD TX-RB
HONDA Accord
MITSUBISHI (CHRYSLER) Sigma/Scorpion
NISSAN (DATSUN) Bluebird
SUBARU 4WD Wagon
TOYOTA Corolla RWD
TOYOTA Corona

pre-1980
FORD Cortina TC-TF
FORD Escort*
FORD Falcon 6 XA-XF
HOLDEN Belmont/Kingswood/Premier
HOLDEN Gemini TX-RB
HOLDEN Torana 6
HONDA Accord
HONDA Civic*
MAZDA 323 RWD
MAZDA 626 RWD*
MAZDA 929*
MERCEDES BENZ
MITSUBISHI (CHRYSLER) Galant*
MITSUBISHI (CHRYSLER) Sigma/Scorpion
MITSUBISHI (CHRYSLER) Valiant/Charger
NISSAN/DATSUN
TOYOTA Celica RWD*
TOYOTA Corolla
TOYOTA Corona
TOYOTA Landcruiser*
VOLKSWAGEN Beetle

STEERING

This includes steering problems (such as poor wheel alignment) as well as problems with actual steering linkages (including power steering).

Percentage of cars with problems:



Problems in more than half of sample:

1986-88
FORD Falcon 6 EA-EB

1983-85
HOLDEN Commodore V8 VB-VK

Looking i

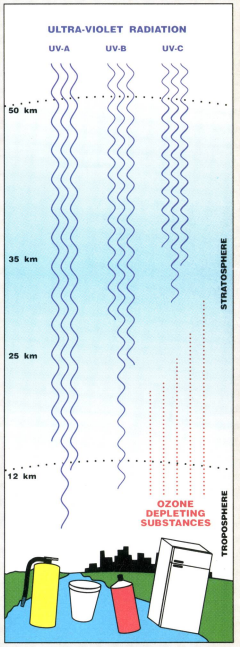
We peer through the hole and peel back the layer to shed some light on the problem of ozone depletion — what is it, what's being done and what needs to be done.

THE OZONE LA

■Ultra-violet (UV) radiation:
Most UV-B (after UV-C the most dangerous of the sun's rays) is filtered out by the ozone layer before it reaches us — if the ozone layer thins, it allows more UV-B radiation to reach the earth's surface, although UV-C is still blocked.

■Ozone:
Ozone is naturally present in very small quantities in the atmosphere, from the Earth's surface to about 50 km up. In the troposphere (up to about 12 km above the Earth's surface) ozone is a greenhouse gas, contributing to global warming. But in the stratosphere (about 12 km to 50 km up), where the greatest concentrations of ozone are found, it filters ultraviolet (UV) radiation from the sun, absorbing dangerous UV rays so they don't reach the Earth. The maximum concentration of ozone is found in the stratosphere between about 25 and 35 km up — but even here it's present in no more than about 10 parts per million. While ozone in the stratosphere sometimes descends to the troposphere, the reverse doesn't occur — so tropospheric ozone can't replace ozone lost from the stratosphere.

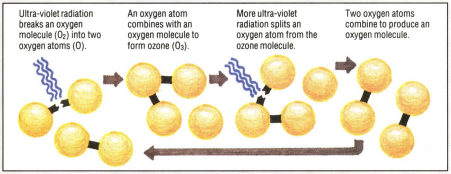
■Sources of damage:
Only about 20% of the chlorine that reaches the stratosphere at the moment and attacks the ozone layer is from natural sources (such as seawater evaporation); the remainder is from long-lived industrially released chemicals such as CFCs. Some halons — such as found in firefighting equipment — may also release bromine to the atmosphere, which also destroys ozone.



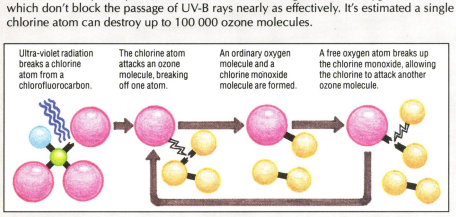
nto ozone

R – BRIEFLY ...

■ **Ozone formation:**
Ozone is constantly being formed and broken down in the stratosphere, in a reaction which starts when solar radiation of particular wavelengths hits oxygen molecules and breaks them up (see below). If not disrupted by the presence of other chemicals, it's believed the creation and destruction process preserves a natural equilibrium. Variations occur according to seasons, different latitudes and changes in the intensity of solar radiation, but from year to year the average natural quantity and distribution of ozone remain much the same.


Ultra-violet radiation breaks an oxygen molecule (O_2) into two oxygen atoms (O).
An oxygen atom combines with an oxygen molecule to form ozone (O_3).
More ultra-violet radiation splits an oxygen atom from the ozone molecule.
Two oxygen atoms combine to produce an oxygen molecule.

■ **Ozone destruction:**
Ozone levels are affected by chemicals which speed up the rate at which ozone is broken down. By far the best known of these ozone-depleting substances are chlorofluorocarbons (CFCs). CFCs are gases stable enough to drift intact all the way to the stratosphere, where they are broken down by UV radiation and release chlorine atoms. Chlorine atoms speed up the breakdown of ozone, turning it back into oxygen molecules, which don't block the passage of UV-B rays nearly as effectively. It's estimated a single chlorine atom can destroy up to 100 000 ozone molecules.


Ultra-violet radiation breaks a chlorine atom from a chlorofluorocarbon.
The chlorine atom attacks an ozone molecule, breaking off one atom.
An ordinary oxygen molecule and a chlorine monoxide molecule are formed.
A free oxygen atom breaks up the chlorine monoxide, allowing the chlorine to attack another ozone molecule.

THE WORLD'S RESPONSE to the depletion of the ozone layer could achieve a global first: the control of a major threat to the environment before any enduring damage is done. That's the hopeful prognosis of a 1987 United Nations study of the problem — and while it's far too soon to stand back and cheer, it's still to be proved wrong.

The problem — or crisis — is commonly known as the hole in the ozone layer; more accurately, the ozone layer is getting thinner, and at times is especially thin over some parts of the world. But the effects won't be felt in just some parts of the world — potentially, they'll touch everyone, everywhere.

Scientists are unable to make exact predictions about the rate, extent and consequences of ozone loss; nor do they fully understand what causes it. As one CSIRO scientist has written, the science surrounding ozone depletion is "complex, relatively recent and deals with a problem which is still evolving today."

But as Minister for the Environment Ros Kelly told a conference on ozone protection earlier this year, "What you don't know *can* hurt you." It's a message that's been absorbed by governments and industries around the world, who've taken steps to contain the problem without waiting for science to provide all the what, when, why and how answers. As another speaker told the conference, we can't afford to wait till scientific forecasts are proved true before we act.

There's a hole in the ozone layer

Within the stratosphere is a region in which ozone concentrations are higher than elsewhere — this is the ozone layer. The ozone layer is essential to the support of all life on the globe, as it shields us from the most harmful portion of the 'package' of radiation we receive from the sun. Most UV-B (after UV-C the most dangerous of the sun's rays) is filtered out by the ozone layer before it reaches us. According to one description, the ozone layer acts as a kind of umbrella in the stratosphere, providing vital shelter for life on earth (see *The ozone layer — briefly...* for more details).

Over 25 years ago, scientists expressed fears that ozone in the stratosphere would be depleted by the increasing quantities of chemicals being released into the atmosphere. Evidence of that depletion first started emerging in the mid 1980s, and since then has accumulated rapidly, revealing a problem of frightening and escalating proportions.

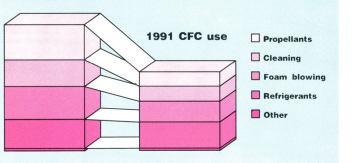
The amount of ozone in the ozone layer is measured by a satellite-carried instrument known as a Total Ozone Mapping Spectrometer (TOMS). First launched in 1978, TOMS currently provides some 190 000 measurements per day of ozone in the atmosphere. Combined with atmospheric monitoring at sites around the world, these readings provide the basis for efforts to map the present and future scale of the problem. At the moment, it looks something like this:

- Ozone depletion is now significant across the globe except over tropical latitudes. In Europe last December and January, ozone levels were 10-20% below average. Total losses over Europe and North America in the past decade average over 5%. In Australia, losses over the past 10 years range from a statistically insignificant 1% or less over Darwin to almost 6% over Hobart.
- In 1991, for the fourth time in the last five years, substantial ozone depletion occurred over the Antarctic in spring (the Antarctic ozone 'hole' — on average, for each of the four years ozone levels have been 50% less than during the 1960s). Significant ozone depletion occurred in the Arctic region this year.
- The Antarctic ozone hole is caused by a number of factors, but very largely by the interaction between CFC-released chlorine in the stratosphere and polar stratospheric clouds (PSCs). During winter, chemical reactions occur which mean PSCs trap chlorine. When sunlight penetrates in spring (from late August),

SECTOR BY SECTOR, BIT BY BIT

THE HARD WORK is yet to be done, says one view of industry's efforts to wean itself from chlorofluorocarbons (CFCs) and other ozone-depleting substances (ODSs). According to this assessment, the weaning process involves five stages of increasing difficulty: first and easiest is to phase out ODS-propelled aerosols; next is to stop using ODSs in new products and equipment. Third, fourth and fifth are replacing ODSs in foam-blowing and cleaning applications, in existing machinery and equipment and, most difficult of all, in essential uses such as asthma inhalers.

The graph on the right demonstrates the point: while the use of CFC propellants has been reduced by 58% worldwide since 1986, the use of CFC refrigerants has declined by only 7% — and in this sector, the reductions are due mainly to improved management practices such as more efficient recycling. In other words, while progress through the first of the stages outlined above has been rapid, the task is now becoming more difficult. Below, we outline some of the changes being made.



Plastic foam

Used mainly for thermal insulation, cushioning materials and packaging — CFC-11, CFC-12, CFC-113 and CFC-114 are all used.

Alternatives: Best substitutes at the moment are some hydrochlorofluorocarbons (HCFCs — for transitional use only); also some hydrofluorocarbons (HFCs) and carbon dioxide; in some applications plastic foam may be replaced by other products (such as fibre for cushioning).

Firefighting

Halons are used in portable extinguishers and fixed fire supression systems.

Alternatives: In some applications (defined as essential uses), none — emphasis instead is on recovery and recycling, and development of a halon 'bank'. Halon substitutes are being developed but much work remains to be done.

Aerosols

CFC-11 and CFC-12 have been used as propellants.

Alternatives: Include hydrocarbons, non-aerosol formulations (such as pump packs). Since December 1989 CFCs in aerosols have been banned in Australia except for some essential-use categories — notably oral inhalant drug products (such as asthma inhalers).

Solvents

CFC-113 is used in electronics, the metal industry and dry cleaning, and for aerosol solvent products; 1,1,1-trichloroethane (methyl chloroform) is used in metal cleaning, aerosols and formulations including adhesives and correction fluid (except where specific exemptions are granted, its use in aerosols is banned from January next year).

Alternatives: Include (depending on the application) organic solvents, HCFCs (short-term), aqueous cleaning, conservation and recycling. In some cases likely substitutes are not yet commercially available, in others new technologies need to be developed.

Vehicle air conditioners

CFC-12 is used as a refrigerant.

Alternatives: HFC 134a, blends of several refrigerants (short-term); mandatory schemes for recovering CFCs (for reuse, recycling or reprocessing) during servicing have also been introduced.

Domestic refrigerators

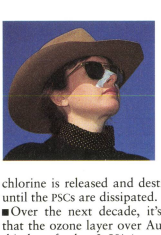
CFC-11, CFC-12, CFC-113, CFC-114 and CFC-115 are used as refrigerants.

Alternatives: HFC 134a is the preferred substitute at the moment; other possiblities include hydrocarbons, ethers and HFC mixtures.

Commercial and industrial refrigeration and air conditioning systems

CFC-11, CFC-12, CFC-113, CFC-114 and CFC-115 are all commonly used refrigerants.

Alternatives: Vary depending on the application, but include HCFCs and blends of several refrigerants (short term), ammonia, hydrocarbons. This sector is facing major problems, as much of the equipment involved has been specifically engineered to take particular gases for which no drop-in substitutes are available — at the moment, most CFC reductions are being achieved through better containment to prevent leaks during operation, and servicing and recovery/recycling programs.



For industry ... the issue of ozone protection is a nightmare come true, with moving goalposts, changing government regulations, expensive R & D, early write-offs for expensive equipment, with little scope for recouping costs in the short term and a lack of data on which to base their decisions.

chlorine is released and destroys ozone until the PSCs are dissipated.

■Over the next decade, it's estimated that the ozone layer over Australia will thin by a further 3-5% (ozone loss from 1978 till now is estimated at between 1.4% and 4.6%).

In human and environmental terms, these figures and estimates translate into a number of consequences. Ozone depletion increases our exposure to UV-B radiation (see *The ozone layer — briefly* for more details) — and increased exposure to UV-B radiation is predicted to result in:

■Greater incidence of non-melanoma skin cancers and eye diseases such as cataracts. (A report released by the UN Environment Programme earlier this year estimates that sustained ozone depletion of 10% will result in an extra 1.6-1.75 million cases of cataracts and 300 000 cases of skin cancer worldwide.)

■A rise in the severity of outbreaks of some infectious diseases, because increased exposure to UV-B reduces the effectiveness of the human immune system.

■Reduced crop and timber yields. Greater levels of UV-B may increase plants' susceptibility to pests and disease, and inhibit growth and photosynthesis.

■Increased stress on an already fragile aquatic ecosystem — phytoplankton, the starting point of the marine food chain, live near the surface of the water and are expected to be seriously affected by increased levels of UV-B.

■Climate changes. Changes in the concentration and distribution of ozone in the stratosphere affect stratospheric winds and temperatures; ultimately, this may have an impact on local weather patterns.

Then fix it ...

It was first suggested that chlorofluorocarbons (CFCs) might deplete ozone in the stratosphere in the early 1970s. First available in the late 1920s as an alternative refrigerant to ammonia, CFCs offered a combination of qualities which just about guaranteed their popularity in a range of applications. Highly stable, non-flammable, non-corrosive, poor conductors of heat, of low toxicity and relatively cheap and simple to manufacture, by the end of the 1950s they were being used not only as refrigerants in air conditioning and refrigeration systems and products but as blowing agents in the manufacture of plastic foams, propellants in aerosols and solvents for industrial cleaning.

However, as two scientists pointed out in 1974, their stability meant CFCs could survive long enough to be transported to the stratosphere, where they would eventually be broken down into separate parts, one of which — chlorine — destroys ozone. (*The ozone layer — briefly...* gives more details on this.)

Ozone depletion found its way onto the international agenda in 1977, when the UN Environment Programme convened a meeting to co-ordinate a global response to the suspected problem. But by the early 1980s, it seemed that the effects of CFCs and their close relations, halons, on the ozone layer had been overstated, and the issue lost momentum — only to regain it when in 1985 British scientists discovered a 'hole' opening up in the ozone layer over the Antarctic. Later research indicated it was caused by growing levels of chlorine and bromine in the stratosphere, due largely to the break-up of CFCs and halons.

In 1986, the UN Environment Programme brought together a group of experts to develop a structure for an international ozone protection treaty. In 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer was signed by 25 nations, among them the US, Canada, Japan, EC countries and Australia. On January 1, 1989, it came into force.

The first international environmental protection treaty of its kind, the Montreal Protocol sets out a timetable for reducing and phasing out the production, use, import and export of CFCs and other ozone-depleting substances (ODSs). Importantly, it also sets out a process for review, allowing for changes both to the list of 'controlled' substances and to the dates by which reductions and phase-outs should be achieved.

In its original form, the Protocol required:

■A freeze on production and consumption of five types of CFC (CFCs -11, -12, -113, -114 and -115) at 1986 levels and a 50% reduction in 1986 levels by 1998.

■A freeze on production and consumption of halons 1211, 1301 and 2402 at 1986 levels.

Several provisions were made for developing countries, among them a 10-year period of grace in achieving the control measures contained in the Protocol. Further provisions were introduced in 1990, when the Protocol was first reviewed. Key among these amendments — designed to spread the responsibility for ozone protection more fairly between developed and developing countries — were agreements on the transfer of ozone-benign technology from developed to developing nations and establishment of an international fund to help developing countries meet the costs involved.

A number of other amendments resulted from that 1990 review, as various factors combined to convince Protocol signatories to agree to a more urgent pace of change. According to one study, there was growing scientific and public concern about ozone depletion, hard evidence of ozone thinning across the globe, confirmation of the role of CFCs and other human-produced chemicals in causing the losses over the Antarctic, and better alternatives to ozone-depleting substances were becoming available.

As a result, the Protocol was revised so that:

■Two industrial solvents, methyl chloroform and carbon tetrachloride, were added to the list of ODSs to be phased out, the former by 2005 and the latter by 2000.

■The phase-out date for the production of CFCs and halons was set at 2000, with the timetable for reductions before then brought forward; 10 types of CFC were added to the initial list of five to be phased out.

As well, a number of signatories agreed to adopt a set of guidelines on the use of 'transitional' substances. These

are chemical replacements for ozone-depleting substances which have some ozone-depleting potential but much less than CFCs and the other substances controlled by the Protocol. They're seen as necessary in some applications in the short or medium term to make a rapid phase-out of controlled substances possible, but their use needs to be restricted. According to the guidelines, these transitional substances — notably hydrochlorofluorocarbons (HCFCs) — should ideally be phased out by 2020, or no later than 2040.

The Protocol is due to be reviewed again in November, and the process of negotiating the changes to be agreed on is well under way. Prompted both by the upcoming review and by new scientific evidence showing unexpected ozone losses in the northern hemisphere, a number of countries have already announced revised phase-out targets. At an early negotiating meeting, the UN Environment Programme recommended that all controlled substances be phased out by January 1996 (apart from some temporary exemptions for essential uses), that the use of HCFCs in non-essential applications be banned and that further restrictions be placed on HCFC production and consumption.

In Australia, ozone protection policies have set targets ahead of those in the Protocol by several years. Our 1991 consumption of CFCs, for instance, was 50% down on 1986 levels — four years ahead of the Protocol requirement. Annual consumption (defined as the amount manufactured and imported minus the amount exported) of ODSs is to be cut by 95% by the end of 1995, and a total phase-out achieved by the end of 1998. Should the Protocol review this year set phase-out dates before this, Australia will revise its targets to follow suit. (For more on the situation in Australia, see *The local picture* below).

With what shall we fix it?

For industry, a Commonwealth Environmental Protection Agency (EPA) spokesperson has said, the issue of ozone protection is a "nightmare come true, with moving goalposts, changing government regulation, expensive R&D, early write-offs for expensive equipment, with little scope for recouping costs in the short term and a lack of data on which to base their decisions."

Alternatives to ozone-depleting substances have had to be developed which not only do the job but contribute neither to ozone depletion nor to global warming. Other factors which need to be considered include toxicity, energy efficiency, 'drop-in' ability (whether and/or how much products or processes have to be modified before the substitute can be used), cost and availability.

There's some way to go but the challenge is being met, according to a 1991 report assessing the worldwide development and adoption of alternatives. It is now technically possible, the report says, to phase out virtually all consumption of CFCs and halons by 1995 — though how easily it can be done varies enormously between developed and developing countries and between different industry sectors and applications (see *Sector by sector, bit by bit* on page 16 for details).

The main chemical alternatives to CFCs are hydrochlorofluorocarbons

THE LOCAL PICTURE

Our slice of the consumption pie

Consumption of CFCs and other ozone-depleting substances (ODSs) in Australia is 2% of the world total. However, per head of population we are major users of ODSs.

Who's in charge of our ozone protection policy?

Australia's national Strategy for Ozone Protection was developed by the Australian and New Zealand Environment and Conservation Council (ANZECC), in consultation with industry, public interest groups and unions. The Strategy sets out a series of recommendations for controlling the manufacture, import, export and end uses of ODSs, ranging from outright bans on some products and processes to measures for improving public and industry awareness of the problem.

How policy becomes practice

At federal level, the Commonwealth Ozone Protection Act 1989 controls ODSs listed in the Montreal Protocol (see main article) through two main programs:

- A licensing scheme which registers manufacturers, importers and exporters of ODSs and allocates quotas.
- Regulations which control the manufacture and import of specific products (for instance, the manufacture of aerosols containing ODSs is banned apart from some essential uses).

It's the job of state and territory governments to implement other recommendations of the Strategy for Ozone Protection — but while all the governments have endorsed the Strategy, the degree to which they've passed legislation putting it into effect has varied. Most states, though, control the sale and purchase of ODSs, most have licence schemes in place allowing only accredited tradespeople to handle ODSs, and most have encouraged the adoption of industry codes of practice on the handling, recycling and so on of ODSs.

What we've got to show for it

Addressing an ozone protection conference earlier this year, a Commonwealth Environment Protection Agency (EPA) spokesperson noted as successes resulting from the Strategy so far:

- A 50% reduction since 1986 in Australia's consumption of CFCs (compared to the international average of 40%).
- A 25% cut in the export of CFCs (Australia is the only country to have adopted export controls).
- A reduction of about 80% since 1988 in the use of halons.

Where more needs to be done

- Development of an infrastructure for recovering and recycling ODSs.
- Greater co-operation between and within different ozone-depleting industry sectors, to improve the exchange of information and technology.
- Improved education about the problem of ozone depletion. Different industry sectors need information tailored to their specific needs, says an industry spokesperson — for instance, all those refrigeration mechanics across Australia need material telling them what their responsibilities are — while the public generally just needs to be better informed.
- Better labelling, so consumers can identify products which contain or are made with CFCs and other ODSs; claims relating to reduced levels of CFCs and other ODSs should be as specific as possible.
- Close consideration of import controls, so that local products manufactured with relatively expensive ODS alternatives aren't disadvantaged by competition with imports produced with much cheaper CFCs (an issue with products such as cars, fridges and foam-filled furniture).

(HCFCs) and hydrofluorocarbons (HFCs). Both are imperfect substitutes — they contribute to global warming and HCFCs, which contain chlorine, also deplete ozone (although less than CFCs do). Greenpeace and other environmental organisations have been highly critical of the development and adoption of HCFCs, in particular — they're concerned that the ozone-depleting potential of HCFCs has been underestimated, and that other equally or more viable alternatives have been largely ignored because they don't involve the same financial returns for the companies producing them.

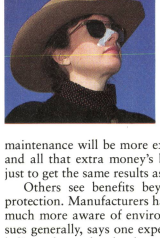
With the imposition of controls on the production and use of HCFCs, though, most experts believe they're a "positive interim measure", as senior principal research scientist of the CSIRO's division of atmospheric research Dr Paul Fraser puts it, because without them it would take much longer to phase out CFCs.

As well, according to an industry estimate, only 30% to 40% of current CFC users will switch to HCFCs or HFCs. Pushed by the approaching phase-out dates, many manufacturers are re-examining the reasons why they used CFCs in the first place and, in some cases, are finding they can do without them and their chemical substitutes. Instead, they're moving to 'not in kind' alternatives – examples include finger-powered pump packs instead of CFC-propelled aerosols, cleaning with soap and steam instead of CFC solvents, and air conditioning systems which use water chilled by only small amounts of refrigerant.

Options which allow existing equipment to be used beyond phase-out dates are also being developed — for instance, blends for use in commercial refrigeration and air conditioning postpone the need for equipment conversion or replacement and could save millions of dollars (one estimate costs the 'early retirement' of equipment in these sectors at billions of dollars worldwide).

Recovery and recycling programs for ODSs are another urgent priority. Not only do these programs prevent CFCs escaping into the atmosphere, but also prolong the life of existing products and equipment beyond phase-out dates by ensuring a supply of CFCs and so on for servicing. And they're particularly important for halons used in firefighting applications, for which there are no suitable substitutes as yet.

Some in industry believe only the ozone layer benefits from all the changes. The new gases are more expensive, retooling will be more expensive, and maintenance will be more expensive — and all that extra money's being spent just to get the same results as before.



There's no doubt consumers are going to have to pay to help protect the ozone layer ... the increased costs faced by industry will ultimately be passed on to consumers.

Others see benefits beyond ozone protection. Manufacturers have become much more aware of environmental issues generally, says one expert; another believes the need to develop new technology has resulted in spin-off technological improvements. At the very least, because substitutes for ozone-depleting substances cost more and are less readily available than the gases they replace, the systems and products in which they're used will be designed and operated with greater care than before. The benefits there are difficult to quantify but may include, for instance, improved occupational safety.

And what will it cost us?

There's no doubt consumers are going to have to pay to help protect the ozone layer. According to one industry spokesperson, the increased costs faced by industry will ultimately be passed on to consumers — so the costs of converting or replacing commercial refrigeration equipment, for instance, will eventually show up in the price of frozen foods.

The price of products manufactured with ODS substitutes is also likely to go up, at least in the short term — domestic fridges produced with CFC-substitute HFC 134a, for example, are expected to cost 10% more (though much of this price hike is due not to the cost of HFC 134a but to the manufacturing changes needed to use it).

CFC recovery and recycling programs mean there'll be no need to junk existing fridges before the end of their natural lives. But it will be essential to make sure any servicing is carried out by a tradesperson accredited to handle ODSs.

The situation with cars is a little trickier. There are already some models available whose air conditioning systems use CFC-substitute HFC 134a; major Australian manufacturers are moving to introduce HFC 134a to all their models by mid-1994, with most becoming available mid-1993. For people who want to buy a new car before then, this poses a potential problem, as they may find themselves having to get the car 'retrofitted' at a later date so it can take the new refrigerant.

Other options should also be available, however, among them the transitional use of 'drop-in' blended refrigerants (these have some ozone-depleting potential but much less than CFCs) and recycled CFCs. (Not all mechanics have CFC recovery/recycling units, though — make sure yours does).

Owners of existing cars may also find themselves obliged to have the air conditioning system fitted with devices to prevent leaks or which provide early warning of impending leaks (some models are already produced with such mechanisms). An industry code of practice requires car air conditioning systems to be upgraded to standards defined in the code — but what effect this has will depend on how the code is implemented in the different states and territories.

Future prospects

It can take many years for ozone-depleting substances to reach the stratosphere, so the levels of ozone depletion apparent now don't yet reflect the period of peak ODS production and emission. The CSIRO's Dr Paul Fraser expects the point of maximum concentration of ODSs in the stratosphere will be reached in about 10 to 15 years' time.

Assuming strict worldwide compliance with the targets set by the 1990 Montreal Protocol, the ozone layer should then start to repair itself. Scientists believe that by the second half of the next century, it will be restored to natural levels.

However, there could still be some surprises. As Dr Fraser notes, scientific knowledge is not yet complete. Scientists know that chlorine is a major agent of ozone depletion, but there may be others as well. And there is much to learn about the mechanisms by which depletion occurs. Within the next five years, he says, science should have its understanding of the problem pretty much right — and at the moment, it knows enough to be sure it hasn't got it wrong. Hats, sunglasses and sunblock on, everyone. ❑

A MATTER OF SUBSTANCE

We took the tin opener to 600 cans of food and sorted the solid from the liquid.

DID YOU KNOW a can of cherries could be nearly half syrup by weight? And between 12% and 37% of tinned tuna in brine is brine? When you buy a can of asparagus, how much of your dollar goes to buying the asparagus spears and how much to the liquid they're packed in?

The short answer is — as with the other foods we checked — it depends on the brand. There's a wide variation in 'drained weight' — what's left after you've discarded the liquid. (For the long answer, take a look at our tables.)

That's why we'd like to see labels clearly stating drained weight as well as net weight, like some of the imported products we bought. It's all very well declaring the net weight of a can of tomatoes, but it doesn't mean very much when, for instance, an SPC 425 g can contains 324 grams of tomatoes compared to 258 g in a 425 g can of BI-LO tomatoes. And without X-ray vision it's impossible to tell one from the other.

An international food standard, called Codex Alimentarius, is accepted in many countries for some products — to ensure a minimum standard for solid content is met. While the Codex standard is not obligatory in Australia, it provides a benchmark against which to assess products for sale here. In our testing we used the methods as specified by the Codex standards.

What we did

We sent our shoppers out in force to supermarkets around Sydney to fill their trolleys with cans of asparagus, beetroot, corn kernels, cherries, peaches, pineapple, strawberries, tomatoes and tuna. We picked a variety of Australian and imported brands, and purchased six cans of each item. Another team of people went in search of prices — and came back with a list of 1318 prices from stores around Australia for the goods we had bought.

Back in the lab, we measured the net weight and, after draining the contents through a sieve, the drained weight. We calculated the average percentage of solid in each six-can sample, and also noted the difference between any stated weights and actual weights, whether net or, as in a few cases, drained.

How did they do?

All the products fulfilled the Codex requirements for their category, where there is a specific Codex Standard. Of the products we tested, there are no Codex requirements for beetroot, cherries or tuna.

In the net weight stakes, tinned tomatoes came out as the worst offenders. Some brands weighed in at less than the stated net weight. On the other hand, some brands of other foods such as asparagus contained more solid than the drained weight stated on the can (which was mostly expressed not in total grams but in terms of the number of serves of a particular weight in the can). And LETONA Trim Fruit sliced peaches were 99% solid; this unusually high percentage is because they are virtually a solid pack, without much juice.

Within each food category, there is a surprisingly wide variation of solid to liquid. Take asparagus spears, for instance: for percentage of solids, BLACK & GOLD and TRIANGLE came in top with 72%, while CHEF'S OWN fell in last with only 59% solid.

If you're counting the pennies, a few more sums give you the price per 100 g of solid. In that case, a can might contain a high percentage of liquid, but if it's particularly cheap, you may still consider it good value for money. We've listed our tables in order of price per 100 g of solid content for each type of food.

There may be only a small difference in solid content yet quite a difference in price. For example, the cheapest 425 g can of peach slices, BI-LO, cost 65 cents and came fourth in our list of brands in terms of percentage of solid, at 71%. A more expensive brand of peach slices, SPC, cost $1.44 per can, with 74% of solid. That's only 3% (or 12 grams) more solid content, yet 79 cents more expensive. In one case — GOULBURN VALLEY — you get less solid content (70%) for an even higher price — $1.50 per can.

Price is one element of value for money — the other, quality, fell outside the scope of this particular test. Comparing quality requires a tasting panel and many other tests, since quality is very subjective.

No prizes for guessing that generics tend to come out cheaper than many branded products — and this is generally true even after calculating the price per 100 g of solid.

Home-grown versus imports

Overall, the Australian products we bought, weight for weight, are more expensive than imports — a sobering discovery. But within each food category there is a wide variation of prices, even among the Australian lines. For example, the cost of 100 g of Australian canned sliced beetroot ranges between 19 cents and 27 cents. Again, the scope of this particular test doesn't allow us to comment on differences in quality between imports and Australian brands.

The difference in price may reflect a wide range of factors such as labour costs, volume, overheads and so on. There is also the contentious issue of dumping — where the domestic market is flooded with imports priced below cost.

Other issues

■ **Batch codes.** While the vast majority of cans carried readable batch codes — which are vital for quality control — on two brands of tuna — TRIDENT and CORAL REEF — the batch codes were obscured by 'Dolphin Friendly' stickers. The manufacturer assures us this problem will be rectified.

■ **Use-by dates.** As canned food may be stored for months, even years, until that rainy day when the rest of the cupboard is bare and the shops are closed, use-by dates would be more reliable than old price tickets hinting at a purchase at least a decade ago! Unfortunately for those emergency supplies which sit in the cupboard for years, only a few of our cans had use-by dates.

Conclusion

If you're happy with the quality, follow our tables and buy the cheapest cans in terms of price per 100 g. Meanwhile, in our continuing quest for adequate product information — we ask manufacturers to state drained as well as net weight, so you can judge for yourselves if you're getting your money's worth.

Brand (in order of cost per 100 g drained weight)	Type	Origin	1 Stated net weight (g)	2 Price per can ($)	3 Average solid by weight (%)	4 Price/100 g drained weight
TOMATOES						
HOME BRAND	Peeled	Australia	410	0.50	71	0.17
NO FRILLS	Whole peeled	Thailand	425	0.49	70	0.17
SOUTHERN CROSS	Whole peeled	Australia	425	0.59	75	0.18
BI-LO	Whole peeled	Thailand	425	0.50	62	0.19
SAVINGS	Whole peeled	China	425	0.60	70	0.20
PAYLESS	Whole peeled	Thailand	400	0.55	61	0.21
SORRENTO	Peeled	Italy	400	0.58	67	0.21
FARMLAND	Whole peeled	Australia	425	0.79	71	0.26
TRIDENT	Whole peeled	Italy	400	0.69	62	0.27
LETONA	Whole peeled	Australia	410	0.83	71	0.28
SPC	Whole peeled	Australia	425	0.97	76	0.30
ARDMONA	Peeled	Australia	425	0.80	63	0.31
BLACK & GOLD	Whole peeled	China *(A)*	425	0.82	64	0.31
GOULBURN VALLEY	Peeled (no added salt)	Australia	425	0.85	63	0.32
EDGELL	Whole peeled (no added salt)	Australia	410	0.95	64	0.35
TUNA						
CORAL REEF	Shredded in brine	Thailand	425	1.89	78	0.55
HOME BRAND	Chunk-style in brine	Thailand	425	1.68	68	0.56
SAVINGS	In brine	Thailand	425	1.69	67	0.57
NO FRILLS	Chunk-style light meat in brine	Thailand	425	1.67	63	0.60
BLACK & GOLD	In brine	Philippines *(B)*	425	2.03	71	0.65
SEAHAVEN	Light meat, chunk-style	Australia	425	2.88	88	0.76
FARMLAND	Chunk-style	Australia	425	2.99	81	0.85
TRIDENT	Light meat, chunk-style in brine	Thailand	425	2.92	78	0.86
SEAKIST	No added salt, in water	Australia	425	3.33	74	1.03
GREENSEAS	Chunk-style in brine	Australia	425	3.76	84	1.04

(A) No longer sourced in China. *(B)* Also sourced in Thailand.

(continued overleaf)

1 STATED NET WEIGHT

The stated weight of the contents of the tin — solid plus liquid. All tins must carry this information. In most cases the actual net weight was equal to or greater than the stated net weight — several cans' contents weighed more than stated.

2 PRICE PER CAN

We worked out the median price of each item from price surveys across Australia. The median is the middle number in any group when placed in ascending or descending order.

3 AVERAGE SOLID BY WEIGHT (%)

Having separated the solid and liquid content, we averaged the percentage solid over our six-can sample for each product.

4 PRICE PER 100 g DRAINED WEIGHT

Once we determined the average amount of solid in the can, we worked out how much you'd pay for each 100 g of solid, based on the median price. Assuming it's the solid — the asparagus spears or the corn kernels — that you want to use, this figure gives you an easy way to compare brands for price.

Brand (in order of cost per 100 g drained weight)	Type	Origin	Stated net weight (g)	Price per can ($)	Average solid by weight (%)	Price/100 g drained weight
ASPARAGUS						
NO NAME	Cuts	New Zealand	340	0.79	67	0.33
GREENWOOD	Tips & cuts	China	425	0.89	62	0.34
HOME BRAND	Cuts	New Zealand	340	0.80	63	0.35
NO FRILLS	Cuts	New Zealand	340	0.77	62	0.35
BLACK & GOLD	Cuts	New Zealand	340	1.19	67	0.50
TRIANGLE	Cuts with tips	Australia	440	1.59	71	0.50
MOUNTAIN MAID	Cuts with tips	Australia	340	1.45	72	0.57
FARMLAND	Cuts	New Zealand	340	1.35	63	0.59
EDGELL	Cuts	Australia	340	1.50	70	0.60
SPC	Pieces	Australia	340	1.45	65	0.65
JOHN WEST	Cuts & tips	Canada	340	1.79	62	0.83
BI-LO *(C)*	Spears	China	425	1.58	67	0.54
NEWMARKET	Spears	New Zealand	340	1.78	64	0.79
NO FRILLS	Spears	New Zealand	340	1.77	62	0.80
HOME BRAND	Spears	New Zealand	340	1.78	61	0.81
BLACK & GOLD	Spears	New Zealand	340	2.40	72	0.92
TRIANGLE	Spears	Australia	440	3.01	72	0.93
CHEF'S OWN	Spears	New Zealand	340	2.33	59	1.07
FARMLAND	Spears	New Zealand	340	2.42	61	1.07
INTERNATIONAL PANTRY	Spears	China	340	2.25	61	1.07
EDGELL	Spears	Australia	440	3.34	67	1.11
SPC	Spears	Australia	340	2.75	61	1.30
BEETROOT						
GOLDEN CIRCLE	Baby beets	Australia	850	1.53	73	0.25
EDGELL	Baby beets	Australia	825	1.61	63	0.30
FRIMLEY	Sliced	New Zealand	425	0.57	70	0.18
BI-LO	Sliced	Australia	425	0.57	70	0.19
FARMLAND	Sliced	Australia	425	0.62	72	0.20
NO FRILLS	Sliced	Australia	425	0.62	72	0.20
HOME BRAND	Sliced	Australia	425	0.63	67	0.22
WATTIES	Sliced	New Zealand	425	0.65	65	0.23
BLACK & GOLD	Sliced	New Zealand *(D)*	425	0.69	66	0.24
GOLDEN CIRCLE	Sliced	Australia	450	0.77	68	0.25
EDGELL	Slices	Australia	425	0.81	68	0.27
CORN						
FRIMLEY	Kernels	New Zealand	440	0.69	73	0.21
HOME BRAND	Kernels	Australia	440	0.68	70	0.21
PAYLESS	Kernels	New Zealand	440	0.63	69	0.21
SAVINGS	Kernels	Australia	440	0.68	72	0.21
NO FRILLS	Kernels	Australia	440	0.66	67	0.22
MOUNTAIN MAID	Niblets	Australia	440	0.75	69	0.24
BLACK & GOLD	Kernels	Australia	440	0.79	70	0.25
PREMIER CHOICE *(C)*	Kernels	Thailand	425	0.72	63	0.27
GOLDEN CIRCLE	Kernels	Australia	440	0.89	72	0.28
EDGELL	Kernels no added salt	Australia	440	0.92	72	0.29
FARMLAND	Kernels	Australia	440	0.88	69	0.29

Brand (in order of cost per 100 g drained weight)	Type	Origin	Stated net weight (g)	Price per can ($)	Average solid by weight (%)	Price/100 g drained weight
PINEAPPLE						
NO FRILLS	Sliced in natural juice	Indonesia	425	0.55	72	0.17
HOME BRAND	Sliced in natural juice	Indonesia	425	0.66	73	0.20
PAYLESS	Sliced in natural juice	Thailand	425	0.74	70	0.24
FARMLAND	Slices in natural juice	Thailand	425	0.75	65	0.25
PREMIER CHOICE *(C)*	Sliced in light syrup	Thailand	425	0.80	71	0.25
SAVINGS	Sliced in natural juice	Thailand	425	0.72	66	0.25
BLACK & GOLD	Sliced in light syrup	Indonesia	425	0.79	70	0.26
GOLDEN CIRCLE	Sliced in heavy syrup	Australia	450	0.94	59	0.33
PAYLESS	Pieces in natural juice	Thailand	425	0.59	68	0.19
BI-LO	Pieces in light syrup	Thailand	425	0.65	65	0.21
SAVINGS	Pieces in natural juice	Thailand	425	0.69	64	0.24
FARMLAND	Pieces in natural juice	Thailand	425	0.76	67	0.25
GOLDEN CIRCLE	Pieces in heavy syrup	Australia	450	0.90	60	0.32
PEACHES						
NO FRILLS	Halves in syrup	Australia	425	0.67	71	0.21
LETONA	Cling halves in syrup	Australia	425	1.30	73	0.41
GOULBURN VALLEY	Halves in natural juice	Australia	425	1.51	68	0.51
BI-LO	Sliced	China *(E)*	425	0.65	71	0.21
PAYLESS	Slices in light syrup	Greece	425	0.68	65	0.25
LETONA Trimfruit	Sliced	Australia	400	1.21	99	0.27
LETONA	Slices in light syrup	Australia	425	1.31	73	0.41
SPC	Slices in natural juice	Australia	425	1.44	74	0.45
WEIGHT WATCHERS	Slices	Australia	420	1.41	72	0.46
GOULBURN VALLEY	Slices in natural juice	Australia	425	1.50	70	0.51
CHERRIES						
SPC	Red sweet, unpitted	Australia	425	1.75	63	0.62
SPC	Dark, unpitted	Australia	425	1.79	63	0.63
HOMEBRAND	Sweet, without pits	Spain	420	1.59	52	0.71
STRAWBERRIES						
HOMEBRAND	Whole, in syrup	China	420	1.49	42	0.81
INTERNATIONAL PANTRY	in syrup	Spain	420	1.65	40	0.94
CHEF'S OWN	in light syrup	New Zealand	430	2.33	50	1.11

(A) No longer sourced in China. *(B)* Also sourced in Thailand. *(C)* To be discontinued. *(D)* Also sourced in Australia. *(E)* To be sourced locally.

Buy it and try!

The price of food is said to be related to its quality. But what is quality? And is it important?

IN THE beginning there were brands. Top-price, top-quality brands, and 'second' brands which were cheaper and used leftovers and poorer-quality ingredients — the sort you-know-who rejects.

Then came Jewel and Franklins with their dramatically price-reduced NO NAME and NO FRILLS products. Forced to compete, other supermarkets introduced their own brands, and while national 'second' brands still exist, they've become less important than the house brands and their 'generic' counterparts.

A house brand — such as NO FRILLS, HOME BRAND — can only be bought from the retailer that owns it, while a 'generic' is usually distributed by a wholesaler to the retailers it supplies. Some house brands are claimed to be of better quality than generics, and a few are in fact intended to be a quality alternative to premium brand names. However, in most shoppers' minds the two are usually lumped together into the same category, and except when stated that's how we've considered them in this article.

National brands can still be divided into premium and second brands. Premium brands are designed to please. Their manufacturers claim to use better-quality raw ingredients (cocoa instead of colouring and flavouring in a cake mix, for instance), and they are priced accordingly. Unlike the generics and house brands, which may be sourced from a local manufacturer one month and Taiwan the next, premium brands aim for consistent quality — today, tomorrow and next year. This makes for brand reliability. It also means when you try a new product, a premium brand is less likely to be disappointing.

In this article we've used a range of foods as examples to illustrate the differences you might find between national brands and generics/house brands.

Made to a price?

Lower retail prices mean cutting back somehow on the production cost — for example, using the leftovers at the end of a premium brand's production run, using lower-quality ingredients, or reducing the amount of the main ingredient (or active ingredient in the case of household cleaning products).

A good example is frozen sweetcorn. Corn packed for premium brands is claimed to be chosen according to strict criteria: sweetness, colour, tenderness, and above all taste. According to one manufacturer, if a crop passes all other tests but fails the taste test, that crop will be earmarked for the generic market.

While generic packs of frozen corn may include 'cobbettes' as good as 'the real thing', they are more likely also to contain cobs which are more mature (and therefore starchier) and tougher than is considered ideal. There may also be odd sizes, minor blemishes, or missing kernels.

However, generics are not always of lower quality. A crop may turn out to yield more than the expected amount of high-grade fruit or vegetables, in which case the cheaper lines benefit. This, we're told, is where house brand vs generic quality comes in. Some suppliers claim the house brand will be considered first.

Buyers for generic lines, while admitting price is the bottom line, also claim their generics are often as good as the national brands. One manufacturer admits the house brand vinegar and generic black sauce he supplies are the end runs of the company's own nationally known brands. However, buyers insist buying generics is not just buying the end-runs from production lines, but buying according to the retailers' standards. Having said that, they concede that perhaps the consumer can expect the generic tomato sauce to be a bit more watery than 'the real thing', and the generic bleach maybe to contain less active ingredient. In many cases, they argue, this does not matter. The whole question of value is simply a matter of people's expectations.

On a budget?

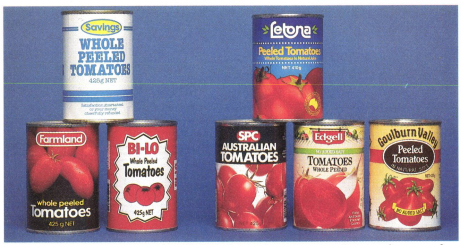
When you need the utmost purchasing power from every dollar it's sensible to consider generics before national brands. Our article *Drained weight* on page 20 of this issue gives some guidance as to value for money purely in terms of quantity per can. However, in terms of quality you'll need to consider each purchase carefully — you won't be able to shop in a hurry — and sometimes you'll simply have to buy and try.

A good question to ask yourself is whether the *lack* of quality will matter if the product turns out to be poorer than you expected.

If you want tinned asparagus for filling vol-au-vents or hors d'oeuvres, for example, it would be wasting money to buy the top brand of asparagus spears. However, that doesn't necessarily mean you should buy the generic. Tins of lower-grade asparagus spears can contain odd-sized spears (too thin or thick for the standard-sized national product, which means you may get overcooked mushy spears along with the firmer, thicker ones), and sometimes spears which have started to become fibrous due to a delay between harvesting and canning.

Instead, it may be better to buy the premium brand of tips and cuts than risk having to discard some spears as being unsuitable. Tips and cuts are generally cheaper than spears.

When we looked at sliced beetroot for our story on drained weight, we found the main quality difference between brands (apart from taste, which



House brands or national brands — it's worth experimenting to see how much *you* need to pay.

Value for money? The beaker on the left shows the amount of spaghetti we found in a can of national-brand spaghetti in cheese and tomato sauce; on the right is a house brand with the same net weight but noticeably less spaghetti. The national brand cost 30 cents more. The nutritional difference is marginal; the judgement regarding value is up to you and your budget.

we didn't test) was in colour, with pale beetroot found in some generic cans. In one generic can we found some root fibres still attached. However, we also found one slice with the same problem in a can of national brand — which just goes to show the national brands aren't infallible.

The good news

The good news is that staples such as butter, sugar, flour, rice and oil vary little between national brands and generics — although one miller told us the generic flour *may* occasionally vary in its protein content. However, the difference would be so small as not to matter.

You could also expect to find very little difference in simple foods such as tomato paste, which contains only tomatoes and sometimes salt. Any difference will be in the grade of tomatoes used, and perhaps the concentration. If you use paste only as a minor flavouring ingredient in home cooking, it's a fair bet you'll find one as good as another. But if you use half the jar per recipe, then product concentration will be a value-for-money argument only you can settle. Try it and see.

On the other hand, margarine, although a basic item, is a more complex manufactured food and varies considerably between brands. The cheaper margarines may soften to the point of becoming quite oily during hot weather, and will taste more like, well, margarine. (Apparently many consumers still judge the quality of margarine according to whether or not it tastes like butter.)

A generic margarine which uses (cheaper) soya bean oil, we're told, may deteriorate in taste as it nears the end of its shelf life. This is because soya bean oil has the habit of developing an unpleasant taste as it ages. For this reason premium brands often elect to use the more expensive sunflower and canola oils as their base.

Cake mixes vary too. While the Food Standards Code stipulates they must have a minimum amount of raising agent, one miller told us his company's own brand was *guaranteed* to rise (presumably because it contains more raising agent).

Additionally, generic mixes are more likely to contain colouring and flavouring instead of pieces of fruit, chocolate, or nuts. Ultimately, ingredient substitutes make a difference in flavour. And that's where subjectiveness comes in. Only you can decide if you're happy with a generic cake mix.

Is it really cheaper?

Food technology has reached a stage where inferior foods can often be pretied up to look like the real thing.

Take tinned spaghetti in cheese and tomato sauce. We looked at two — a national brand and a house brand. The national-brand spaghetti looked brighter and more appetising even when cold, while the house brand had a jelly look to it. Nevertheless, the amount in both tins looked identical, and both were labelled as being 440 g.

When we washed and weighed the contents, however, we found that while the national brand costing 82 cents contained 286 g of actual spaghetti (65% of the total contents), the other (costing only 52 cents) contained much less — only 193 g (44% of the total contents). The reason they looked the same was that the manufacturer had used starch to bulk out the sauce in the cheaper tin.

If you have very little money and just want to stop the hunger pangs, you will be tempted to buy the cheapest product regardless of its content. Health authorities recognise this as being one of the problems of poverty — when you want to fill your plate, modified starch, providing it looks and tastes okay, will do. In fact, even a refined and processed food like spaghetti contains more fibre and vitamins (albeit minimally) than starch thickener.

Read the label

Reading the label can give you some useful information. And if percentage ingredient labelling were to be introduced you would have an even better idea of the food value of each product.

First, what's the product called? Asparagus cuts and tips? Or asparagus cuts? They're not the same product, even though they may sit together on the shelf. Cuts are the pieces chopped off the bot-

tom end of the spears to allow them to fit in the cans. Tips are the top bits from damaged or wrong-sized spears. Cuts are more likely to be fibrous.

Next, read the small print. Manufacturers are required by law to list all the ingredients in descending order of content by weight; water can be added at the end of the list, whatever its proportion. So, a careful comparison of products can tell you quite a bit.

Looking at our tins of spaghetti, for example, there are significant differences in the ingredients, and the order in which they are listed:

National brand	House brand
spaghetti	spaghetti
tomatoes	tomato puree
sugar	sugar
salt	salt
cheese	thickener
onions	potato starch
spices	spices
food acid (330)	cheese
water	food acid (330)
	water

As you can see, the manufacturer of the cheaper spaghetti used tomato puree in the sauce instead of tomatoes. But the most telling ingredients are the two types of thickeners used in the cheaper product — the national brand listed none.

SAY CHEESE

Cheddar cheese is a living product. Its flavour changes as it grows older: for the first three months of its life it's marketed as mild cheese; at six to nine months it's a matured cheese; and at nine to 12 months it's called 'vintage'. The manufacturer knows about a month after manufacture whether it will progress in flavour as expected. Those which the manufacturer has doubts about will be sold as generics.

Additionally, it may already be apparent that some cheeses have developed a flavour not in keeping with the company's brand image. Some may be slightly fruity, a bit too acidic, too bitter or too sharp. Again, these will be earmarked for the generic market.

Having said all this, it's still possible to get generic cheeses which seem identical to a national brand. Again, you won't know until you try. The question to ask is: does a predictable cheddar cheese flavour matter to me? For cooking, it probably doesn't. If you're having a wine and cheese party, it might.

FISH TALES

Generic and house brand frozen fish fingers and fish portions are usually made of fish mince — not fish fillet (which is frequently only made clear in very small print on the packets). Some national brands use mince too. There's nothing nutritionally wrong with it, but to some people the taste and appearance might be less acceptable than fillet.

Frozen fish mince products are made from imported frozen blocks of a sieved blend of leftover trimmings, pieces of fish left on the bones after filleting, and whole fish too small to fillet.

These mince blocks are graded by quality and used according to whatever a retailer is prepared to spend on its brand. The buyer's instructions are usually based on the product's place in the market — quality or budget-priced.

Blocks with a lot of colour contain a fair amount of skin and darker fish, and are used in products such as fish cakes where the whiteness of the other ingredients (potato and starch) will mask the colour. Consumers, it seems, don't like their food to be grey.

Mince blocks of predominantly white fish are generally used for house brands and lower-priced brand-name products.

You can find more information on the differences between brands of fish fingers and portions in the February 1992 issue of CHOICE.

ICE CREAM

As with other generic products, generic ice cream is made to a price. And that price will depend on the cost of the ingredients: a cheaper ice cream will contain more air and cheaper ingredients, while the more expensive premium varieties will be heavier and richer.

For example, although the Food Standards Code stipulates ice cream must contain at least 10% milk fat, that milk fat can be supplied in a number of ways. A manufacturer can use fresh cream, butter or dehydrated milk fat. The Food Standards Code also stipulates that ice cream must contain at least 168 g of milk solids per litre, for which a manufacturer can use, for example, whole or skim milk. The overall difference in the taste of the final product is akin to comparing fresh whole milk with powdered milk.

Egg yolk or an emulsifier can be used to incorporate and hold air throughout the product; cocoa or chocolate chips to provide the flavour in chocolate ice cream, or flavouring and colouring. Likewise, strawberry ice cream can be flavoured with strawberries, strawberry puree or strawberry essence and colouring.

There are halfway measures: some fruit, some flavouring and colouring. Or some chocolate chip, but not as much as in the quality brands.

Ultimately, it comes down to taste. Again, *you* taste and decide.

WHAT DOES IT ALL MEAN?

There's no doubt generics can be great buys. Some, like butter and flour, are going to be fairly predictable in quality because they are simple products.

One thing our testers noticed while working on our drained weight story was that despite manufacturers' claims you may not always be assured of better quality in the national brands of canned fruit and vegetables. Undesirable characteristics such as brown flecks, poor colour, mushiness and fibrous pieces can be found across all brands.

Other foods — especially value-added products such as frozen lasagne — will vary tremendously in their ingredients. Instead of beef mince, the cheaper product may contain a mixture of mince and textured vegetable protein, tomato puree instead of tomatoes, and less cheese, for instance. So, read the label. If you're satisfied with the ingredients and the price is right, try it.

Buyers for the generic lines have told us they are just as interested in consumer feedback as their national-brand counterparts. If you're not happy with a generic product, let the company know. You may help change the quality for that product. Be alert. It's a war out there! ❑

THOSE RUSTY CANS

IT'S FAIRLY COMMON to find goods packed in ancient-looking cans, some of which might be showing signs of rust. However, unless a can is dented, blown out, or showing signs of leakage, you can probably assume the contents are quite safe to eat.

However, pinpricks of rust can be a sign the cans are old, or that they have been stored in less than ideal conditions. While this may not affect the contents, it is sometimes an indication that the product hasn't been treated too well after being canned. Correspondingly, you might find the 'quality' aspects (that is, the taste, texture and appearance) of the product may not be as good as you'd like. This is unlikely to matter from a health point of view with acidic foods such as tomatoes and fruit, but we suggest you steer clear of any cans of fish or meat products which suggest carelessness.

HOW GENERICS PERFORMED IN CHOICE TESTS

■ **Coated fish fillet products** — February 1992
The two products with the highest fish content (60%) were national brands — **I&J 12 Chunky fish fingers** and **BIRDS EYE 6 Crumbed fish fillets**. The price per 100 g of fish was $1.13 and $1.92 respectively. House brands gave the two lowest results for fish content:
SAFEWAY 6 Crumbed fish fillets were 46% fish at $1.39 per 100 g of fish.
FARMLAND 14 Oven fry crumbed fish fillets were 50% fish at $1.33 per 100 g of fish.

■ **Coated fish mince products** — February 1992
NO NAME 40 fish fingers (NSW) had the highest fish content at 63% and were also the cheapest at 55 cents per 100 g of fish.
For comparison, **I & J 15 fish fingers** were 54% fish at $1.30 per 100 g fish, and **SAVINGS** (a house brand) **6 Oven fry crumbed fish fillets** were 42% fish at $1.11 per 100 g of fish.

■ **Bottled water** — January 1992
Two generics were included, **HOME BRAND** and **NO FRILLS**, and neither recommended. The **HOME BRAND** contained too much fluoride, while **NO FRILLS** — along with several others — was criticised for having no batch code.

■ **Soy drinks** — April 1992
There was one house brand in the report, **FARMLAND**, which was comparable with others of the same type.

■ **What's cooking?** — April 1990
Canned tomatoes — The generic variety tested had more vitamin C, the brand-name variety more niacin (vitamin B_3).
Canned pineapple — The generic had more vitamin B_1 and betacarotene (vitamin A precursor), the brand-name variety more vitamin C.

■ **Pasta sauces taste-test** — July 1989
We tasted 20 sauces. Generics/house brands ranked 8th, 10th, 17th and 18th.

■ **Moisturisers** — December 1991
In a user trial of 95 moisturisers, **TANIA** (a Woolworths house brand) was the top-ranking one.

■ **Laundry detergents** — February 1990
They were ranked in 11 groups according to washing performance. Top performers (washing performance 90%) were all branded products. All generics tested cleaned less effectively than this, coming in with around 75–80% washing performance.

■ **Dishwashing detergents** — August 1991
45 tested. The four best buys included **WOOLWORTHS** in fourth place.
In a table showing the cost of washing 10 000 plates, there were three generics/house brands in the top four cheapest products.

■ **Light bulbs** — June 1990
A brand-name (**SYLVANIA**) was the winner from 17 bulbs, while one generic — **NO NAME** — was rated 'unacceptable' because of its low light output. **NO NAME** and **TARGET** bulbs were unfused (although not mandatory, internal fusing of bulbs is a safety measure).

■ **Pre-wash stain-removers** — September 1990
The generics were poor performers — none ranked higher than group five, which scored soil removal performance at only 65%. (The best performers — group one — ranked at 85% soil removal.)

■ **Bathroom cleaners** — November 1990
One generic — **NO FRILLS Mould Destroyer** — was trialled, and found to be quite good at mould removal.

■ **Personal insect repellents** — October 1989
Two generic aerosols were tested, **PLAIN WRAP** and **NO FRILLS**; both came at the bottom in terms of protection time provided against mosquitoes.

TREES DON'T LIKE SMOG EITHER

GASES IN air pollution encourage aphids, and cause other damage to some trees and crops, a British research program has confirmed.

According to a report in the British environment journal, *Ends*, one study showed that exposure to even modest concentrations of nitrogen dioxide and sulphur dioxide speeds up the growth and reproduction of aphids, an insect pest which causes serious damage to forests in the UK. The growth rate of insects on trees exposed to the pollutants for only 24 hours increased by a significant amount. In some cases, it was enough to cause the number of aphids to increase four-fold in two months.

Other findings included:

- Trees exposed to polluted acid mists were less able to withstand frosts.
- Hydrogen peroxide in smog was found in sufficient concentrations at high altitudes to slow the growth rate of some native tree species in parts of Britain.
- Ozone in photochemical smog can cause the flowers of rapeseed (grown for oil) to abort, and may be a factor in reducing crop yield.

The research also increased our understanding of how low-level ozone affects plants. The gas reduces the efficiency of photosynthesis, as it damages their ability to trap carbon dioxide, and causes structural damage to the internal leaf surfaces, the plant's 'lungs'.

Photo: Lyrebird Photographics, Nowra

GREEN SPOTLIGHT

ARMED WITH INFORMATION, enthusiasm and initiative, a local milko is converting the NSW coastal town of Nowra to recycling. What's so impressive is that he has overcome — by roping in the local paper mill, the manufacturers of milk carton material, the local dairy and the other milk vendors in the area — the list of practical and economic problems which stand between the good idea of recycling and its realisation.

Rick Foster's interest was stirred by reading an article in CHOICE comparing the environmental impact of different packaging materials. "I read that APPM (Associated Pulp and Paper Mills) was trialling a recycling program with milk carton material, so I approached its Shoalhaven mill," he says. At the time that mill, located in nearby Bomaderry, was only processing unused carton rejects and offcuts, but he didn't let that stop him.

He decided he'd try to get a used carton collection scheme off the ground anyway. It was basically a "public relations exercise," says Rick. Milk vendors had felt under pressure by Victorian milk suppliers and supermarkets for some time, as they could offer slightly cheaper milk, so he was looking for a way to improve the image and service of home delivery milkos.

He contacted the Association of Liquidpaperboard Carton Manufacturers (ALC) which, along with APPM, is involved in carton recycling schemes in Sydney and Melbourne. It agreed to sponsor milk vendors in the Nowra area, and provided money for containers to be put on the back of their milk trucks for the used cartons they were to collect. (For hygiene reasons, the used cartons can't be put inside the truck with the fresh milk). This helped to motivate the local milk vendors, who all decided to become part of the scheme.

"Local radio and television stations picked up on it," says Rick, and the publicity encouraged local industries to join in. APPM decided it would accept the used material and reprocess it at the Shoalhaven mill. The local dairy, Australian Co-operative Foods, also wanted to become involved. This made the scheme much more viable. Now the milk vendors collect rinsed out and flattened cartons from home delivery customers and leave them at the dairy in a bulk bin. When the bin is full, it goes to the mill.

Initially trialled for a six-month period, the scheme has been such a success that the milk vendors have decided to extend it indefinitely. Says Rick, "While a lot of customers have been right behind the scheme," he is still tinkering with it, trying to increase participation. For example, the milk vendors didn't pass on the last increase in the cost of cartons, so milk packaged that way became cheaper than milk in plastic bottles. This increased sales of cartons, but not everyone who buys them puts the empties out for collection. Rick is not discouraged. Instead he's thinking of ways to motivate people again, and ideas for keeping the enthusiasm of the vendors from waning.

The used cartons are recycled into office paper and specialty papers such as company letterhead. In Sydney and Melbourne, ALC and APPM have set up collection bins for cartons for recycling at Food Plus stores, and are currently collecting four to five tonnes of material a week for recycling from these collection sites. A similar scheme was launched recently in Adelaide.

Thanks to CR of North Nowra, NSW, who nominated his local milkos and APPM and is this month's Green Spotlight winner. Keep sending in entries — we're interested in people who are doing something about their environmental concerns, as well as in good and bad products and practices, labelling claims, packaging and advertisements.

Send your nominations to: **Green Spotlight**, CHOICE, 57 Carrington Road, Marrickville 2204. Each month's winning entry will receive books from our Consumer Bookshelf to the value of $25. Please include your telephone number so we can find out what titles you'd like.

CONSUMER IN LAW

MISSING IN ACTION!

If your wallet, purse, bag or briefcase is lost or stolen, what should you do? What are your legal responsibilities and your liabilities?

THIS REPORT will help you prepare against loss by collecting together the important telephone numbers you'll need — before something happens. And it highlights the things you can do to minimise your loss.

FIRST THINGS TO DO

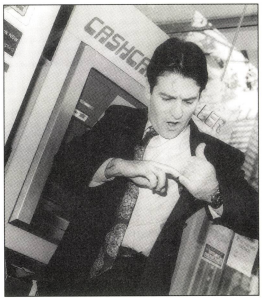
1. When you discover your loss the first thing to do is to retrace your steps, if possible, and have a good search. This is because reporting things stolen or lost and then finding them may still mean paying replacement card fees and inconvenience while you're waiting for cards to be reissued.

2. Tell the card issuers your credit cards, cash cards and charge cards have been stolen.

With credit and cash cards your liability is limited to the first $50 of fraudulent use. This liability ends when you report the loss, but see 3, below, for the position if you've disclosed your PIN number. With an **American Express** charge card you have no liability provided the loss of the card is reported immediately, but the $50 limit does apply to **Diners Club** cards.

3. If you think a PIN number was with a card it's vital you tell the issuing institution at once — it can then restrict access to funds though its computer system. However, keeping a PIN number with your card breaches the terms and conditions of the card, and the issuer is likely to hold you responsible for any money withdrawn or spent through EFTPOS (direct debit).

4. You may want to report the loss at a police station — things may be handed in, or you may be able to make an insurance claim. You'll probably need to do this in person (rather than by telephone), and ask to be given a copy of the incident report — you may find you need this if you're making an insurance claim.



5. If you've lost a cheque book contact the issuer and put a stop on the cheques. Unfortunately, because you're unlikely to know the number of the last cheque you used, the institution may recommend a stop is put on all your cheques which haven't been cleared yet. This may mean that cheques you *have* written are stopped too, and you would then have to write new cheques. The person you've written the cheque to may have a fee to pay because the cheque wasn't honoured, although (because you're not at fault) you're unlikely to have to pay the fee for stopping the cheques (often around $3 to $4 per cheque).

6. If you've lost a **mobile phone** let Telecom know on 1104 (24 hours in some places, business hours in others). You're liable for calls made on the phone until Telecom can put a stop on your account (for which they charge $20). To minimise the risks you should consider leaving the phone set to 'incoming calls only' when you're not actually making a call if your phone has a security code for outgoing calls.

7. Store cards and **Telecard**. As with credit and charge cards you need to tell the issuers; your liability varies but is generally the same as with a credit card. If thieves have got your Telecom Telecard PIN number you'll be liable for calls made until you report the loss.

8. If you're driving you'll need a new licence immediately; it's an offence to drive without one. Rules vary in different states and territories. Generally you'll have to go to the motor registry, produce proof of your identity, and pay a fee for a duplicate licence ($9 to $16). Similarly, lost or stolen registration papers should be reported, and will need replacing.

9. If you've lost an Australian **passport**, get the appropriate form from a post office and take it (with a passport photo) to a police station — you'll need to get the form stamped and then fill in a new application form before you'll be issued a new passport ($87 for a 32-page passport, $122 for 64 pages). It is an offence not to report the loss to the police and the Department of Foreign Affairs and Trade. If you lose a non-Australian passport, report it to the appropriate consulate or embassy and apply for a new one in the normal way.

10. If by a stroke of immense bad luck you lose everything that identifies you and have nothing to verify your signature against in order to start collecting it all again, contact your bank and ask it to verify your signature against the sample it holds of it.

HOW TO MINIMISE YOUR LOSS

There are a few things you can do to minimise your losses. Don't carry things like passports and documents around when you don't need them, and obviously you need to look after your belongings while you're out — for example, keeping your handbag closed and not leaving your wallet in your jacket if you hang it

up in a restaurant. Here are some other tips:

■ Don't attach an address label or car registration number to your keys. This is asking for trouble, though some way to contact you could be useful — at a work address, say. See *Lost keys*, below, for one solution.

CREDIT CARD EMERGENCY NUMBERS

WITH SO MANY institutions issuing credit cards, contacting the right one to report a loss can be a problem. You can report it to a branch of the institution (check the phone book), and you should also be able to find the number to ring on your card statement. But here we list some of the most commonly needed hotline numbers.

■ **ANZ** (all cards): 008 033 844 or, in Melbourne, (03) 277 1166.

■ **Commonwealth** (all cards):
Office hours:
ACT/NSW/NT: (02) 685 1122
Qld: (07) 237 4111
SA: (08) 206 4504
Tas: (002) 38 0612
Vic: (03) 694 5000
WA: (09) 482 6241
Out of office hours: All states except NT: 008 011 217; NT: 008 888 126.

■ **NAB** (all cards): During office hours contact a local branch. Out of office hours: 008 033 103.

■ **Westpac** (all cards): 008 230 144 or, in Sydney, (02) 201 8030.

■ **Other banks**: Contact a branch during business hours; check the phone book for an after-hours number.

■ **Building societies**: Contact your society direct, at a branch or through an after-hours number.

■ **Credit union hotline**: 008 224 004 or, in Sydney, (02) 954 4249.

■ Note: The telephone numbers listed in the phone book under **Visa** and **Mastercard** are for reporting lost cards which have been issued overseas. You need to contact the issuing institution for cards issued here.

Some shops have their own credit cards. Here we list some of the numbers:

■ **Coles Myer** has a credit card issued by some stores: **Country Road, Grace Bros, Katies, Myer, Stirling Stores** in WA and **Target**. To report loss of any of these cards ring 008 338 411 or, in Melbourne, (03) 661 6111.

■ **David Jones**. Ring a local store.

■ **Betta, Bing Lee and Chandlers**. Ring 008 011 023.

■ Don't carry PIN numbers with you. Thieves are wise to disguised numbers, too (for example as part of phone numbers), so do your best to learn your PINs. Some cards allow you to change numbers, but don't make it easy for thieves by selecting an obvious number like 9999.

■ If you're given an uncrossed cheque to pay into your own account and it's been made out to you (not to 'cash'), cross it when you get it, writing 'not negotiable' between the lines — this will mean it can only be paid into your account, not cashed.

■ For many people the worst losses are the personal things, such as photographs and address books. Go through your bag or wallet every so often to make sure there aren't irreplaceable things in it — and a back-up address book could turn out to be a lifesaver.

■ If you've lost your keys consider changing your locks. This can be an expensive option, but could be a wise move, especially if there was information identifying your address or car in the bag or wallet.

■ If you're claiming on insurance (see below) an up-to-date valuation for jewellery and the purchase receipt for a camera, say, will help prove the value of lost items.

■ When you're travelling overseas, leave photocopies of important documents (such as your passport) and cards with someone here. It could speed up replacement to have all the information on tap.

■ Complete the checklist opposite — and keep it in a safe place. You might even consider leaving it in the magazine. Many people keep CHOICE in much safer places than their valuables!

ONE CALL AWAY

CREDIT CARD SENTINEL (CCS) offers a scheme which will keep note of your credit card and charge card details — so that should you lose your cards all the issuers can be informed after a single phone call from you to **CCS**.

You register the details and numbers of your plastic when you sign up. **CCS** will also keep details of documents and serial numbers for you. Included in the package is a coded key tag, which means if lost keys are found and posted they can be returned to you (without revealing your address to the finder). There are also luggage tags and, under some circumstances, the facility to wire up to $200 abroad if it's needed.

Credit Card Sentinel costs $18 for one year or $45 for three, and can be reached on 008 022 043 or in Sydney on (02) 954 3799.

Verdict:

For those without a pack of plastic a scheme like this is an unnecessary expense — particularly if you make sure you have the emergency numbers you need to hand. However, if you were abroad, it could be useful to be able to report all your cards lost with a single phone call. The coded key tag seems like a good idea, too (see *Lost keys*).

INSURANCE COVER

Unless you're on holiday and covered by travel insurance, it's unlikely you'll have insurance cover for any cash you were carrying. On the other hand, a standard contents insurance policy will often cover you for fraudulent misuse of credit cards by unauthorised people (generally cover is up to $500). However, because liability is limited to $50 per card as long as the loss is reported promptly and your PIN is undisclosed, this cover isn't as important as it may first seem.

Contents insurance will also usually cover things like jewellery, cameras and even clothes against loss, theft and damage; you're likely to have to list individually items you want covered. Check whether your policy covers them while you're away from home. For more expensive items (valuable jewellery, for example) you need personal effects insurance. Contents insurance usually limits the value of a claim to around $1000 per item. ❑

LOST KEYS

IT'S A WORRYING thought that if you lose your keys you could be giving a thief easy access to your home. For this reason it's not a good idea to to have a key tag with your address on it. But at the same time you don't want to make it impossible for an honest finder to return them to you.

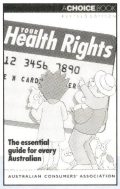
Credit Card Sentinel offers a coded key tag as part of its package (see *One call away*). **Retrieve-a-key** offers a similar key tag, and will send the keys on to you ($7.95 for one year, $14 for three including postage) — ring (02) 635 9696 for more details. The **Commonwealth Key and Property Register** charges $5 per year for a key label which promises a $10 reward if the keys are taken into a police station. Ring 008 033 499 or in Melbourne (03) 614 3441, for more details.

'MISSING IN ACTION' CHECKLIST

Complete this checklist, adding your own account or membership numbers as required, as well as reporting details.

Items	Account/membership numbers	Phone number to call
CREDIT CARDS		
CHARGE CARDS		
American Express		008 251 902 or in Sydney (02) 886 0666 (after hours (02) 886 0688)
Diners Club		008 331 199 or in Melbourne (03) 805 4444
STORE CARDS		
CASH CARDS		
MEMBERSHIP CARDS/BADGES		
TELECOM		
Mobile phone	Phone no:	1104
Telecard		008 038 000
TRAVEL (eg rail pass)		
Passport	No. Issue date:	
OTHERS		
Driver's licence	No.	
Car registration	No.	

CONSUMER BOOKSHELF



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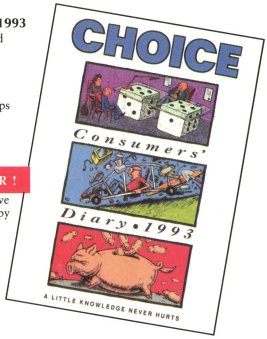

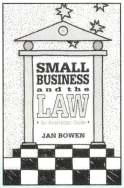

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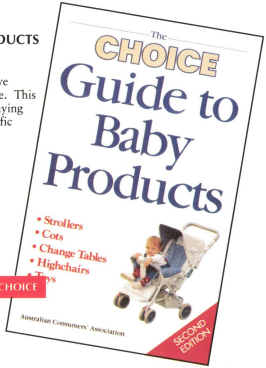

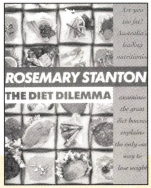

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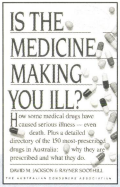
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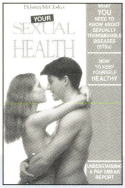
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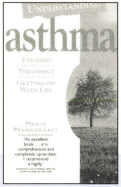

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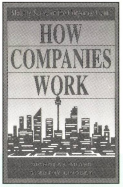

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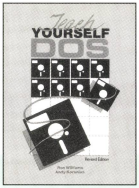

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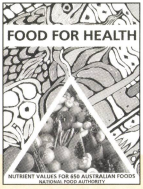

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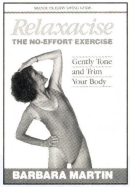

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IRRADIATION

FOOD FOR THOUGHT

It doesn't make your food radioactive, but it can destroy vitamins, it won't destroy toxins and there's no way of telling it's been done. As the end of the year approaches, when the government's moratorium on food irradiation is due to be lifted, we serve up the arguments.

THE GOVERNMENT'S cautious about it; consumers aren't exactly clamouring for it, and it's actually banned in Australia — but there's a high chance irradiated food is reaching our shores and finding its way onto our store shelves and into our shopping baskets. As far as the officials we spoke to know, the only irradiated imports slipping through are spices, which represent neither a large part of our diet nor a major slice of our total imports. But if it were allowed in Australia, other foods could be irradiated — what does this mean for the consumer?

WHAT IS FOOD IRRADIATION?

Food irradiation is one process in a succession of treatments used to conquer pests, bacteria and normal aging in fruits, vegetables, spices and some meat. Food is exposed to ionising radiation — high-energy radiation which causes a change in atoms, producing ions — either from a radioactive isotope such as cobalt 60 or caesium 137 or from a beam of electrons accelerated to high speed by a magnetic or electrical field.

This takes place in a specially designed plant, where food passes along a conveyor system and is exposed to the radioactive source. Radiation is measured in 'grays' (Gy) or 'kilograys' (kGy — 1000 Gy).

Doses vary according to the type of food and the result sought, from a low dose — up to 1 kGy — to inhibit sprouting in potatoes to a high dose — 10-50 kGy — to decontaminate spices.

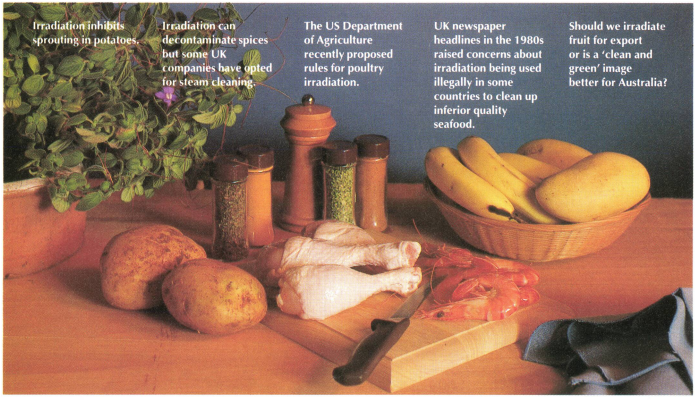
WHAT IS IT USED FOR?

The proposed uses of food irradiation include:

- As a pesticide: it can kill or sterilise some insects. This can be of use soon after harvesting or at a domestic or foreign port as a quarantine procedure. For instance, growers of tropical fruit in Australia are interested in the use of irradiation against the Queensland fruit fly and the mango seed weevil.
- As a decontaminant: it can reduce the level of bacteria which cause food poisoning in seafood, poultry, meat and

Photo: N. Sommer

Not all foods can stand up to irradiation — the cell walls of lemons, for example, are weakened, allowing invasion of black rot fungus.


Irradiation inhibits sprouting in potatoes.
Irradiation can decontaminate spices but some UK companies have opted for steam cleaning.
The US Department of Agriculture recently proposed rules for poultry irradiation.
UK newspaper headlines in the 1980s raised concerns about irradiation being used illegally in some countries to clean up inferior quality seafood.
Should we irradiate fruit for export or is a 'clean and green' image better for Australia?

spices. The same goes for bacteria which make fruits, seafoods and meat go off.

■ To inhibit sprouting in potatoes and other root vegetables, increasing storage time.

■ To extend the shelf life of fruit and vegetables by delaying ripening and aging and by killing spoilage micro-organisms.

Not all foods can stand up to irradiation without being adversely affected; for example, dairy products develop unpleasant flavours and the cell walls of lemons are weakened, allowing invasion of black rot fungus.

An international debate

The feedback from a number of players in the food industry is that, now the enquiries of the late 1980s have quietened down, food irradiation is almost a non-issue in Australia (although the approaching moratorium end will focus thoughts once more on the subject). Some doubt it will ever happen, others believe that even if food irradiation is allowed in Australia it will be in a very limited capacity. Yet another source believes that already food irradiation is a technology whose time is past — that new technologies are available which will do the same job without such consumer resistance.

But while food irradiation may remain illegal in Australia, other countries around the world are happy to allow it, sometimes without even labelling the produce 'irradiated'. On occasion Australian inspectors have come across microbial counts which are "too good to be true", suggesting irradiation may have been used. But even that's not foolproof, as a low irradiating dose could imitate a more believable reading. A reliable method for detecting where irradiation has taken place has yet to be found. See *Use and abuse — the global view*, right for more details.

According to John Landos, director of quarantine at the Australian Quarantine Inspection Services (AQIS), in the quarantine business around the world, food irradiation is a hot topic as an alternative to pesticide chemicals. The World Health Organization (WHO) is preparing irradiation standards for use in quarantine procedures — Australia's long-term position could depend on the extent to which the rest of the world takes on these propositions. Unless Australia chooses to isolate itself, it may find itself swept up by worldwide momentum.

The food irradiation debate is an international one, involving powerful organisations such as WHO, the United Nations' Food and Agricultural Organization and the International Atomic Energy Agency, as well as consumer and interest groups from all corners of the globe. The debate is also highly polarised — it's not even a case of presenting different evidence to support different views. Some of food irradiation's opponents — the international group Food Irradiation Network for one — are not convinced by the methodology used in many of the trials, and in some cases they believe the summaries of research on which WHO decisions were based do not reflect the findings of the original research.

The frequency of 'rubbishing' of results on both sides of the debate is worrying. For instance, in the US $51 million was spent over 25 years researching irradiation of meats. A number of studies showed toxicity but the government was advised to cut its losses and accept that the results were inconclusive.

A witness to the Consumers' Association inquiry in 1987 said: "One gets the feeling that all the findings which are in favour of wholesomeness of irradiated foods are readily accepted, without question, while those findings which question this stand are either rejected or viewed with suspicion."

Whichever side is right, this situation offers no comfort, and inspires little confidence: decision-makers such as governments and the end users — the consumers — are left to make sense of this scientific minefield. When such doubt is thrown on WHO findings, statements like: "It's so safe the World Health Organization thinks we should do more of it" become almost meaningless.

Adding to the shall we/shan't we? debate are the theoretical issues of rules

and regulations controlling doses and approvals for different foods — and on the practical side, worries about abuses of food irradiation to fix up inferior-quality food.

Arguments for and against

Those in favour of irradiating food say it will reduce food poisoning, increase the shelf life of foods, replace the use of post-harvest chemicals and, by reducing post-harvest losses, reduce world hunger — and much more.

Opponents aren't convinced by these claims and in addition are concerned about irradiated food's nutritional quality — that vitamins are destroyed, and that toxins produced by micro-organisms may remain despite the micro-organisms themselves being destroyed. They are also concerned about the safety of workers at irradiation plants and the safety of eating irradiated food.

This last issue, probably consumers' greatest concern, is treated separately in *Is it safe?*, right.

The other arguments are summarised below:

■ **Food poisoning:** The Joint Expert Committee on Food Safety (a WHO committee) stated in 1984, "Illness due to contaminated food is perhaps the most widespread health problem in the contemporary world." Sam Witney, chairman of Vindicator, an irradiation company in the USA, said in an American television program, *20/20*, "The problem is not irradiation. The problem is people dying from food poisoning. If you're sick with diarrhoea and vomiting you need this irradiation plant because we'll make the food safe for you to eat."

Out of context, he appears to be talking about the third world, but in fact he was defending the use of irradiation in America. It's questionable that food-borne disease is Australia's "most widespread health problem".

It is also highly questionable whether irradiation is the answer to food poisoning. For instance, salmonella in chicken can be killed by cooking at 70°C for a few minutes. And careful handling to maintain hygiene is needed whether or not chickens are irradiated before they reach the supermarket.

Also, by diverting efforts further back in the food chain it is possible to reduce the incidence of bacteria such as salmonella. For example, retailers could insist suppliers lower the incidence of salmonella in flocks of chicken.

■ **World hunger:** Proponents of food irradiation say its use will reduce post-harvest food losses, increasing the amount of food available to an ever-swelling world population. But as the International Organization of Consumers Unions (IOCU) argues, "It is hard to find any real evidence that irradiation will do anything to deal with this problem ... The issue is not producing more food, but solving the economic and political problems that prevent food being distributed at affordable prices."

The groups which it's suggested could benefit here are the very ones which are more vulnerable to vitamin loss in irradiated foods (see *Vitamin loss* overleaf). And there are far simpler ways of reducing post-harvest loss — even cardboard boxes would be a start in some regions.

■ **More fresh foods:** This argument applies principally to tropical fruits sold some distance from where they're grown. Growers and/or exporters stand to gain most from this application — but there are other less interventionist ways of keeping fruits and vegetables fresh, like picking grapes at night and keeping them refrigerated.

Like, it seems, every other part of the food irradiation debate, there are 'good' reports and there are less positive ones. For instance, some research on bananas points to an increase in shelf life from 25 to 45 days. But other research shows, in general, just two to five days' extension — some of which would be lost in transport to the irradiation plant — and it concludes irradiation to extend shelf

IS IT SAFE?

THE SHORT ANSWER is we don't know. Radiation strong enough to kill micro-organisms or insects may cause unwanted changes in the food itself. The issues in the food safety question include:

■ **Toxicity**: When on the discovery trail for long-term toxic effects of a substance, scientists look for three main effects: carcinogenic — producing cancers; teratogenic — producing abnormal characteristics in foetuses; and mutagenic — producing genetic changes, as well as tissue damage and sterility. Could irradiation bring about any of these?

The Consumers' Association reported in 1987, "Decades of testing of a multitude of irradiated food types, food components, food models and individual radiolytic products on a multitude of generations of laboratory animals at a cost of millions and millions of dollars has left us a legacy of confusion."

Not much has changed since then: the majority of scientists still say irradiating food is safe, while a minority have serious doubts.

■ **Worker safety:** There is concern over the health of employees of plants who may be exposed to irradiation — that years later they may develop cancer, or they may have children with genetic defects. There are recommended maximum doses for workers at irradiation plants — expressed in a whole body dose limit per year — but some believe these standards are not low enough.

Irradiation of some non-food products already takes place in Australia by a company called Steritech. Over 90% of the company's business is the sterilisation of medical equipment; 18 million wine corks also passed through the plants last year. Workers at Steritech's plants wear film badges at all times, which record radiation exposure and are checked regularly. Steritech's chief executive, George West, says, "They very rarely record anything — they show up more from sitting under a fluorescent light than working in the plant." There is also a string of procedures which mean it's highly unlikely anyone could enter the irradiation chamber while the radioactive source was exposed.

USE AND ABUSE — THE GLOBAL VIEW

FOOD IRRADIATION has the go-ahead in 32 countries, but still the volume of food which undergoes this process is small. As well as consumer resistance, it's a costly process to set up and has a number of practical restrictions. Around the world uses include decontaminating herbs in the US, France, Belgium and the Netherlands; inhibition of potato sprouting in Japan, Israel, Thailand (and others); shelf life extension of strawberries in Argentina and Chile; decontamination of shrimp in Bangladesh; decontamination and shelf life extension of shrimp in the Netherlands. Irradiation tends to be approved for specific foods at specific doses.

There are concerns that irradiation may be used to clean up suspect food — as in 'dutching', where, for instance, a shipment of shrimps is rejected at a port for too high a microbial count, taken away, irradiated and re-presented. The practice is so called because many companies in the Netherlands have allegedly been involved.

HISTORY OF THE DEBATE IN AUSTRALIA

The key points are:

- In 1979, a ban by the National Health and Medical Research Council (NHMRC) on irradiated imports and irradiating food in Australia without specific approval.
- In 1987, a Consumers' Association inquiry which concluded food irradiation should be allowed only under the strictest conditions.
- A subsequent Commonwealth Government report resulted in the government placing a three-year moratorium on food irradiation, due to end in December 1992.

The Australian government also requested WHO reopen the investigation into the safety of irradiated foods and produce a properly referenced scientific report.

The National Food Authority tells us the WHO response is expected any month now, and its arrival will trigger a review of the moratorium. If the moratorium is lifted, a whole body of regulations and controls will have to be put in place before any approval scheme can be designed and food irradiation take place.

Much of the positive pressure in the '80s was coming from exporters who have an interest in any technology which will help keep their produce fresher for longer.

life is not practical because it damages fruit and because there are cheaper, more effective alternative methods.

And rather than patch up the food and farming industries with more and more interventionist processes — with more and more potential side-effects — we need to be looking at the whole food chain from soil to dinner table. As IOCU says, "Consumers do like choice, but not necessarily at any price." We should be focusing on eating more local and more fresh foods, cutting down on processing, transport and storage. Maybe out-of-season fruits are a luxury which we could give up because they cost the environment too much?

The sustainability of food irradiation as a process must also be looked at. While cobalt 60 is considered readily available now, if food irradiation really took off, it could become scarce — and more costly. Scientists worldwide are constantly looking for new technologies in packaging and storage. For instance, the CSIRO is working on a new polymer packaging material which modifies the atmosphere surrounding fresh produce to provide optimum conditions for extended storage. It's expected to be available for commercial use at the end of 1992.

'Active packaging' like this is designed to be part of a rethink of the distribution chain — including ways of maintaining temperature from picking to point of sale and careful handling to minimise damage.

- **Replace post-harvest chemicals:** Russia irradiates grain to kill insects in imports. In Australia the problem of infestation by insects after harvesting is overcome by fumigating silos with methyl bromide, which is being phased out as unsafe. Consumers welcome a reduction in the use of pesticides — but not necessarily by replacing them with irradiation.

Again, there are alternatives: UK herb and spice supplier, British Pepper & Spice (BPS), is one of the more recent companies to reject irradiation. BPS invested £1.4 million over four years to develop a steam-cleaning process to remove microbes, replacing decontamination by ethylene oxide which was banned in the European Community in 1990 because of fears of carcinogenic residues.

Other UK spice suppliers have said 'no' to irradiation and use a variety of heat and encapsulation processes to clean up whole or ground spices.

- **Vitamin loss:** Vitamins including C, A, E, K and some of the B group are sensitive to irradiation and are destroyed in varying amounts depending on the dose and the particular vitamin. In Australia, because of the wide variety of the diet and the likelihood of irradiation only ever being allowed for a few foods, the population as a whole is unlikely to suffer nutrient deficiency. But there are minorities already at risk nutritionally who could be disadvantaged further, including pregnant teenagers, the elderly, Aborigines and the hospitalised. Some argue that the vitamin loss with irradiation is no more than through other food processes — even ordinary cooking. But food irradiation is usually proposed as an *additional* process.

Looking beyond Australia, effects of vitamin destruction could be more severe. For instance, vitamin A deficiency is a serious problem in many developing countries — it can cause a form of blindness, reduced cancer resistance and higher mortality linked with infectious diseases. Leah Bloomfield, a public health nutritionist at the University of NSW, and representative of the Food Irradiation Network, is concerned with WHO's evaluation of the research on the effects of irradiation on vitamin A.

WHO chose to examine studies on tropical fruits: "They didn't look at animal foods, carrots or leafy green vegetables with vitamin A — which are important in developed countries — or vegetables such as yellow sweet potatoes, which are a major source of vitamin A in developing countries," says Ms Bloomfield. She is also concerned with "lack of internal controls and flawed methodology" in the research.

- **Toxins from micro-organisms:** The concern here is that although irradiation reduces micro-organisms, it leaves the toxins they produce untouched. There are concerns, too, that in reducing the level of some micro-organisms irradiation may remove the warning signs — 'off' smells and colour — of the presence of toxins and micro-organisms such as botulinum and viruses which may survive the process. Not only that, it may cause an increase in toxin levels. The toxins of most concern are aflatoxins, which are produced by fungi on grains and groundnuts and which are mutagenic (causing genetic changes) and cause deformities in the foetus; and the toxin responsible for botulism, the most lethal type of food poisoning known.

There are conflicting reports on this, particularly about the aflatoxins. And once again, methods of testing have been questioned — for instance, some trials used only a very low dose of irradiation, lower than would probably be used commercially and too low to have the required effect.

WHO WANTS IT?

Numerous consumer organisations world-wide are concerned about the use of irradiation. The International Organization of Consumers Unions is calling for a global moratorium on food irradiation while a number of safety issues are resolved. The Food Irradiation Network points to a number of areas: outstanding safety issues; the way in which safety has been investigated, reviewed and reported; and doubts about the claimed benefits. In Britain, the Consumers' Association's *Which?* magazine surveyed nearly 2000 adults about their views on food irradiation. Only 13% said they would prefer to buy irradiated food rather than food treated with preservatives.

Consumers are often portrayed as ignorant of the processes of irradiation, and therefore negative about it for the wrong reasons — being frightened that the food is made radioactive, for instance. But in the *Which?* survey only 2% thought irradiation would make

food radioactive.

As a WHO committee writes in one of its fact sheets, "One factor influencing the pace of the development of food irradiation is public understanding and acceptance of the process. So far, this has been difficult to achieve, in view of the misconceptions and fears often surrounding nuclear-related technologies and the use of radiation."

Two major retailers CHOICE contacted said they would be unlikely to sell irradiated food. Coles sees benefits in increased storage life and a safer product in terms of food poisoning, but feels the Australian public "isn't interested in it". Woolworths, on the other hand, says it can't see the need for food irradiation in the light of new developments in the distribution of fruit and vegetables which aim to control temperature better and shorten the time from field to shelf. "Food irradiation's not something we discuss very much — we're now looking at ways of improving storage," Woolworths says.

In Australia, that leaves some fruit exporters, some spice processors and the nuclear and irradiation industries who are interested in food irradiation. Most of the push is taking place overseas.

Conclusion

Opponents of food irradiation say, "If any food has had to be irradiated, consumers need to ask what was wrong with it in the first place." Whether or not you adhere to that opinion, there has to be a reason — a potential problem at least — to irradiate a food. As we've illustrated, like any problem, there is often more than one solution. Even where food is irradiated, it's still only one part of the distribution chain — safe handling is essential right up to the moment food is served up.

Food irradiation has limited applications in Australia and is difficult to justify. While small amounts of irradiated food in the diet may not do any harm, the doubts voiced by some groups are serious enough to require further evidence before irradiated food ever represents a significant part of our diet. Consumers should always have the right to choose between irradiated and non-irradiated products. And they should always be informed that food has been irradiated by prominent, clear labelling. Finally, if it's ever allowed in Australia, food irradiation must be under very tight controls. Approvals must be handled by a national authority and carefully assessed for specific doses on specific foods. ❑

ANNOUNCING

THE FIFTH CHOICE SUBSCRIBER DRAW

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On 1 September, we'll be holding our fifth Subscriber Draw. The lucky winner will be able to choose any three products from the following tests published November 1991 to February 1992.

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☐ Fax machines (January 1992) ☐ Cordless drills (January 1992)
☐ Heat guns (February 1992).

These are products we bought for testing (we never take manufacturers' samples), so you won't be the first to turn them on or set them up. But we'll cover any service problems with a CHOICE warranty that'll match the manufacturers' — just as if you'd bought them new.

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3. Employees, and their immediate families, of the Australian Consumers' Association and its associated companies and agencies are ineligible to enter.
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7. Prizes cannot be taken as cash.
8. South Australian residents may enter the draw by completing the form and posting to Reply paid No. 13, ACA, 57 Carrington Road, Marrickville NSW 2204, without subscribing to the magazine. Only one entry per person is permissible through this method.
9. Last date for receipt of entries to the Draw is 31 August, 1992. No responsibility accepted for lost, late or misdirected mail.
10. The draw will be conducted at the office of the Australian Consumers' Association at 10 am on 1 September, 1992.
11. The winner will be notified by letter and published in the October 1992 issue of CHOICE magazine.
12. The promoter is Australian Consumers' Association, 57 Carrington Road, Marrickville NSW 2204. NSW Permit No. TC92/1188, VIC Raffles & Bingo Permits Board Permit No. 92/700 issued on 24/3/92, ACT Permit No. TP92/442 issued under the Lotteries Ordinance, NT No. NT92/0375.

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CHOICE LINES

Consumer Rights Advice

CHOICE operates consumer rights lines for people having problems with a faulty product or a dispute with a service person. The lines set out what your basic rights are and what steps you can take to protect them. These lines are also available in four languages other than English — Vietnamese, Arabic, Chinese and Turkish.

CHOICE Consumer Rights Advice: **0055 20019**
Advice in Vietnamese: **0055 20008**
Advice in Turkish: **0055 20009**
Advice in Chinese: **0055 20010**
Advice in Arabic: **0055 20011**

Youth lines

A line specifically for young consumers, the 'Ripped-off' Line, outlines your shopping rights as well as letting you know what you can do if you run into problems with something you have bought.

Students can also call a resource line to find out where to get up-to-date information on the consumer movement and the environment. These two topics are the most requested by students and teachers who ring our Consumer Information Service.

CHOICE 'Ripped-off' Line — Advice for Young Consumers: **0055 20007**
CHOICE Student Resource Guide: **0055 20012**

Product advice

A number of product lines also summarise what to look for when you are buying a particular product. Brand-name recommendations aren't included, however — these remain exclusive to CHOICE subscribers.

CHOICE Washing Machine Advice: **0055 20013**
CHOICE Water Filter Advice: **0055 20014**
CHOICE Baby Products Advice: **0055 20015**
CHOICE Safer Domestic Pest Control Advice: **0055 20016**

Other lines

A media 'hotline' provides immediate and accurate background information on consumer issues being reported in the news media, while a 'suggestion line' gives you a chance to say what you would like to see tested or researched for publication in CHOICE.

CHOICE Media 'Hotline': **0055 20018**
CHOICE Suggestion Line: **0055 20017**

Calls attract a rate of 55 cents per minute.

ELECTRIC FRYPANS

Electric frypans are sort of indestructible portable ovens ... and like toasters, are said to be an obligatory item on every wedding gift list.

THEY'RE an icon of suburban life; the Hills Hoist of the kitchen — at one time the only multi-purpose benchtop cooking appliance that could handle anything from the family fry-up to the Sunday roast, and then be shoved away in a cupboard under the sink.

The popularity of electric frypans is a peculiarly Australian and New Zealand phenomenon; they're almost unheard of in Britain and Europe.

But they may not hold this revered position for long. With the arrival of new products onto the market this traditional appliance is being challenged for prominence on the counters of Australian kitchens. Microwave and mini-ovens will cook a roast; fried food can be safely and conveniently cooked in a cool-to-touch deep fryer.

Even rice steamers have become something of a competitor, in that health-conscious consumers can now steam food they may have once fried. Recognising this, some manufacturers have adapted their frypans: Kambrook reports "massive growth" in sales of its **Multi steamer** frying pan, and Sunbeam offers a steaming attachment with all its 11-inch models. Manufacturers are also promoting non-stick coatings for their ability to allow fat-free frying.

WHAT WE BOUGHT

It's been nine years since we tested electric frypans, and only one of the pans we tested then is still available, so we decided it was time for an update.

We bought eight 11-inch (around

PROFILES

Prices shown are indicative of the range found in nationwide checks in June 1992. Models are listed in rank order; cooking performance didn't differ greatly between models, so is mentioned only when a particularly good or bad point stood out.

SUNBEAM FP242 SUPER DEEP

Price: $99/$129

Overall impression

The better of the two extra-deep frypans we tested; its higher sides gave useful extra capacity for large cuts of meat or casseroles, although it couldn't cope with a 4 kg frozen turkey as claimed, (see *Other cooking claims* on page 43). The only frypan which came with an accessory — a plastic spatula.

Good points

- Effective tilt leg.
- Non-stick coating (inside only).
- Very good instructions and recipes.

Bad points

- Simple steam vent invites a burn when used.
- Heat control marked numerically, not in °C.

KAMBROOK KD66 MULTI STEAMER

Price: $95/$109

Overall impression

Designed primarily for steaming, with steamer insert and rack; the rack can be placed in two different positions and dividers on or under it can separate foods. OK as a frypan but circular shape limits capacity a little.

Good points

- Non-stick coating inside and out makes for easy cleaning.
- Good steam vent.

Bad points

- Could not fit 2 kg chicken on inverted rack (as claimed in instruction book). Even without the rack, fewer vegetables fitted than in other pans.
- Heat control marked in °C, but only coarse divisions in colour-coded bands.
- Instructions and recipes not typical of everyday use, and poorly illustrated.

BLACK & DECKER AF83 SUPER LARGE

Price: $89/$112

Overall impression

A good score for convenience, and larger size (12-inch — 305 mm) may make it a good choice for big families — you can fit a few extra vegetables round a roast, for example.

Good points

- Non-stick coating inside and out makes for easy cleaning.
- Good steam vent.
- Heat control marked in °C.
- Good instructions and recipes.

Bad points

- Slightly uneven heat distribution across pan.
- Sharp edge on underside of lid.

Even heat distribution is important when cooking most foods — we cooked a pancake that covered the bottom of each pan and checked it for uniformity. The Black & Decker AF94 Extra Deep pan (left) had the most even heat distribution, the Kitchenmaster AF80 the least even.

280 mm) frypans with the familiar square shape and rounded corners, and one larger 12-inch (305 mm) model, the BLACK & DECKER AF93 Super Large. Kambrook and Sunbeam also make 12-inch models, but we thought one model was adequate to check what the extra size means in practice.

Additionally we tested the KAMBROOK Multi steamer, which is a circular frypan of medium depth (64 mm) with a stainless steel steamer that fits inside.

The BLACK & DECKER AF94 and SUNBEAM FP242 had extra-deep sides for deep frying and larger roasts and casseroles (half as much depth again as the standard frypans); the remaining seven were all a standard 50 mm in depth.

Uneven heat distribution

Even heat distribution is important when cooking most foods, and is determined by pan material, thickness, element size and position, and heat control performance.

In order to determine how evenly each frypan heated, we cooked a large pancake in each to completely cover the base of the frypan. When one side was cooked our tester removed the pancake and assessed the uniformity of cooking (see photos, left). None of the electric frypans we tested cooked as evenly as a heavy-based frypan on an electric stove.

■ **Best and worst:** The BLACK & DECKER AF94 gave the best result, the KITCHENMASTER AF80 the worst — obviously poorer than the other standard-sized pans.

All the others were satisfactory, although the larger BLACK & DECKER AF93 (cool at the corners) and the stainless steel SUNBEAM FP234 were considered below average. The pattern of the circular heating element was clearly visible in most cases.

Hot stuff!

An accurate thermostat is important for slow cooking and simmering at low temperatures, but not all the frypans had accurate temperature controls.

The KITCHENMASTER AF80 was particularly bad — consistently higher (up to 30°C) than the setting throughout its temperature range. This could lead to overcooking or burning in the worst case

Sunbeam FP241 Super Clean

Price: $76/$90

Overall impression

Nothing special, but a good buy for the price — the cheapest of the higher-scoring frypans.

Good points

- Detachable base.
- Teflon 2 non-stick coating inside and out makes for easy cleaning.
- Very good instructions and recipes.

Bad points

- Simple steam vent invites a burn when used.
- Heat control marked numerically, not in °C.

Sunbeam FP234 Gourmet

Price: $99/$129

Overall impression

One of the most expensive frypans, but stainless steel should be durable, and ease of use was good.

Good points

- Stainless steel base, SilverStone outside make for easy cleaning.
- Effective tilt leg and tilt lid.
- Very good instructions and recipes

Bad points

- Simple steam vent invites a burn when used.
- Heat control marked numerically, not in °C.

Black & Decker AF90 Traditional

Price: $65/$80

Overall impression

An aluminium base with enamel outside designed for easy cleaning, but small clearances between the handle and the pan make it more difficult. The cheapest of the BLACK & DECKER range.

Good points

- Good instructions.
- Good steam vent.
- Heat control marked in °C.

Bad points

- Nothing in particular.

Sunbeam FP220 Classic

Price: $65/$80

Overall impression

An aluminium base with enamel ouside for easy cleaning. Small clearances between handle and pan could make cleaning harder, but the base is detachable. The cheapest of the SUNBEAM range.

Good points

- Very good instructions and recipes.

Bad points

- Simple steam vent invites a burn when used.
- Heat control marked numerically, not in °C.

— although the user, with experience, would compensate for this to some extent — and these higher temperatures became evident in some of the cooking tests. Even if this was only a problem in the pan we bought, it could be a sign of poor quality control.

How they cooked

We checked out the frypans for frying lamb chops, roasting a chicken, cooking a casserole and boiling rice, with varied results.

- Typically an electric frypan is used for high-temperature frying of meat. Midloin lamb chops, four per pan, were cooked with good results and no sticking in all pans. Although the cooking results were identical, this test 'worked' the pan, providing other information on surface coating durability and ease of cleaning.
- All the frypans produced an acceptable roast chicken with vegetables, enough to feed four to six people. However, they tend to steam rather than roast and certainly lacked the evenly brown crisp skin of an oven roast. Higher marks went to those that retained initial browning and some texture in the vegetables.
- The frypans were better at cooking a beef curry. This requires long, slow heat and with it the possibility of sticking to the base. Higher marks were awarded to pans which produced a nicely thickened curry, without sticking or needing excessive stirring.

Overall, as with the roast, the differences between the frypans were small.

- Electric frypans are definitely not preferable to the traditional use of a saucepan for cooking rice. We boiled the rice separately for the curry meal, with identical but only fair results for all pans. This was due to the constant stirring required to prevent sticking over the element, and the difficulty in pouring out the cooked rice. Capacity is stated as 250 grams in all cases, though the deep pans could probably hold more.

Other cooking claims

The SUNBEAM FP242 deep frypan claimed to be able to cook a 4 kg turkey. However, we couldn't fit the lid on when we tried a 4.3 kg frozen turkey — it wouldn't have fitted even if thawed. Even a smaller (4 kg) bird would not fit and still leave sufficient room under the lid for proper hot air circulation.

We also tried some of the cake recipes — the BLACK & DECKER and KITCHENMASTER spiced apple teacake and the SUNBEAM teacake and butter cake — but only the butter cake produced satisfactory results.

More energy-efficient?

When we last tested electric frypans we found they used roughly one quarter the energy of an electric stove. It took only 0.62 to 0.82 kWh to roast a chicken, whereas the electric stove used 2.4 kWh. The frypans in that test were all similar to the ones we tested this time, so it's safe to assume these figures are still valid.

Some stainless steel and larger pans may use slightly more energy than aluminium-based pans.

Will non-stick last?

The provision of exterior non-stick coatings is a definite improvement since we last tested frypans, and there appeared to be no difference between Teflon 2 and SilverStone. Predictably, the non-stick frypans were the easiest to clean, followed by the stainless steel SUNBEAM FP234.

All the frypans survived two trips through the dishwasher without damage, although the aluminium pans became a little dulled. The bright finish of the stainless steel SUNBEAM FP234 remained unaffected. Although the SUNBEAM FP220's instructions say its removable base isn't dishwasher-safe, Sunbeam told us the instructions are out of date and the base may be machine-washed.

By the end of the cooking tests all the non-stick surfaces inside the frypans were showing signs of use, although none was discolouring. However, clear scratches were apparent on the Teflon 2 coating of the BLACK & DECKER AF91 as well as peeling of the top layer in a couple of small spots. Scratching was also noticeable to a lesser extent on the BLACK & DECKER AF93 SilverStone and SUNBEAM FP242 SilverStone and to a minor extent on all others. The exterior coatings were undamaged.

The wear and tear on these frypans came only from real use. The bones in chops are in contact with the surface, and when you turn them are likely to scratch it. We used only suitable utensils such as plastic spatulas and light-duty cleaning pads during testing, but in real life users are likely to be less careful and

NOT RECOMMENDED

Black & decker AF94 extra deep

Price: $79/$99

Overall impression

Achieved the best result for even cooking and its extra depth is useful for large cuts of meat or casseroles, but we don't recommend it because of its ineffective tilt leg, which collapsed at the slightest touch.

Good points

- Good instructions.
- Good steam vent.
- Teflon 2 inside and out makes for easy cleaning.
- Heat control marked in °C.

Bad points

- Useless tilt leg — not only did the leg collapse at a touch, the pan gradient produced was too shallow to be effective.
- The tilt lid was also pretty ineffective, dislodging at the slightest bump.
- Retained liquid in the pan when roasting, even with the steam vent open, leading to slightly inferior results.

Black & decker AF91 electric

Price: $70/$99

Overall impression

Achieved good results for even cooking, but the non-stick coating inside couldn't withstand even careful use without damage — if you're paying for a non-stick coating you want it to last. Even if this was only a batch problem *you* could also end up buying from the same batch!

Good points

- Good steam vent.
- Teflon 2 inside and out makes for easy cleaning.
- Heat control marked in °C.
- Good instructions and recipes.

Bad points

- Obvious damage to coating during testing makes durability questionable.

Kitchenmaster AF80

Price: $59/$74

Overall impression

Inexpensive pan sold through K-Mart; claimed by the manufacturer (Black & Decker) to have thinner base metal than its B&D counterpart. Gave the worst result for evenness of heat distribution, and had the least accurate temperature control. For these reasons, and because of its ineffective tilt leg, we have not recommended it.

Good points

- SilverStone inside and out makes for easy cleaning.
- Good steam vent.
- Good instructions and recipes.

Bad points

- Heat control marked in °C but very inaccurate on this sample.
- Uneven heat distribution across the pan.
- Useless tilt leg — would not latch down firmly, and pan gradient produced was too shallow to be effective.
- Sticking apparent when cooking casserole, probably due to inaccurate temperature control noted above.

ELECTRIC FRYPANS

Brand/model (in rank order)	Manufacturer/distributor	Origin	Price ($)*	1 Size (mm) width/depth	2 Material (interior/ exterior
SUNBEAM FP242 Super Deep	Sunbeam Corporation	Australia	99/129	280/77	SilverStone/ename
equal **KAMBROOK** KD66 Multi Steamer	Kambrook Distributing	Hong Kong	95/109	280/64	SilverStone/ (A)
BLACK & DECKER AF93 Super Large	Black & Decker (Aust)	Hong Kong	89/112	305/50	SilverStone/SilverSto
SUNBEAM FP241 Super Clean	Sunbeam Corporation	Australia	76/90	280/50	Teflon 2/Teflon 2
SUNBEAM FP234 Gourmet	Sunbeam Corporation	Australia	99/129	280/50	Stainless steel/SilverSt
BLACK & DECKER AF90 Traditional	Black & Decker (Aust)	Australia	65/80	280/50	Aluminium/enamel
SUNBEAM FP220 Classic	Sunbeam Corporation	Australia	65/80	280/50	Aluminium/enamel
NOT RECOMMENDED					
BLACK & DECKER AF94 Extra Deep	Black & Decker (Aust)	Australia	79/99	280/75	Teflon 2/Teflon 2
BLACK & DECKER AF91 Electric	Black & Decker (Aust)	Australia	70/99	280/50	Teflon 2/Teflon 2
KITCHENMASTER AF80	Black & Decker (Aust)/K-Mart	Australia	59/74	280/50	SilverStone/SilverSto

* Prices shown are indicative of the range found in nationwide checks in June 1992. *(A)* Unidentified non-stick coating.

use metal implements. In all cases the extent of marking is surprising after only two weeks of use.

We can't draw firm conclusions about the projected life of these coatings from this limited testing, as this depends largely on the user's habits. Obviously any coating or surface will last longer if used infrequently and for limited times at lower temperatures. No examples of SilverStone Supra, said to be more durable than ordinary SilverStone, were in this test.

Base material and thickness, number of coats, and overall quality of application will affect the durability of the coating. This may vary not only between manufacturers, but also within a manufacturer's output. We found no significant differences between brands.

Note that even if the coating starts to wear off, the frypan can still be used normally — there is no evidence that eating small quantities of the coating is harmful. (See *Is it safe?* below for details.)

Much of a muchness

Overall, we found only slight differences between the frypans, and they related more to convenience than cooking performance. In general, non-stick coatings are a definite plus for cleaning but may wear off before the life of the pan itself runs out. Based on the small differences we found, we have ranked seven of the 10 models tested in our *What to buy* list — for why we didn't recommend the other three, see their profiles on page 43.

If you want an extra-deep or wide pan there's one of each near the top of our list, and the **KAMBROOK Multi Steamer** scored well too. It would be a good choice for someone who steams food regularly, especially if space is limited and you'd like one appliance for both steaming and frying.

For an ordinary 11-inch electric frypan, though, it's hard to go past the considerably cheaper **SUNBEAM FP241 Super Clean** — it's got Teflon 2 inside and out for easy cleaning, and its overall score is well up with the leaders.

What to buy

Brand/model (in rank order)	Price ($)*
SUNBEAM FP242 Super Deep	99/129
equal **KAMBROOK** KD66 Multi Steamer	95/109
BLACK & DECKER AF93 Super Large	89/112
SUNBEAM FP241 Super Clean	76/90
SUNBEAM FP234 Gourmet	99/129
BLACK & DECKER AF90 Traditional	65/80
SUNBEAM FP220 Classic	65/80

*Prices shown are indicative of those found in nationwide checks in June 1992.

Is it safe?

A LEGITIMATE question for owners of older or worn frypans with non-stick coatings which are peeling or flaking is: what are the health effects of eating non-stick coatings?

The answer? They are perfectly safe under normal cooking conditions. Made of perfluorocarbon resin, the coatings are particularly inert and therefore any particles should travel harmlessly through the digestive tract and not be absorbed.

Warranties

All the pans tested carried a 12-month replacement warranty.

Heat control

All the models tested came with a mains cord terminated with a heat control. The heat control plugs into the frypan and regulates the pan temperature from less than 100°C to over 200°C. You remove the heat control to clean the pan.

The **BLACK & DECKER, KITCHENMASTER** and **SUNBEAM** frypans use the same model of heat control and hence are physically interchangeable, although surprisingly they performed differently: the **SUNBEAM** controls were the least accurate and **BLACK & DECKER**s' the most. The only obvious difference was the label on the thermostat knob — see *Profiles* for details. We preferred labels that used °C rather than numbered settings such as the **SUNBEAM**s, or colour codes such as the **KAMBROOK**.

All the power cords were long enough to satisfy the Standard.

Steam vent

The steam vent allows excess water to escape, typically when cooking a roast to prevent the meat and vegetables from being steamed rather than roasted. The vents on the **BLACK & DECKER**s and **KITCHENMASTER** are controlled by rotating a lever under the handle of the lid, which directs steam away from the user. Raised symbols indicate the direction of rotation to open/close.

The **KAMBROOK Multi Steamer's** vent is

FEATURES			PERFORMANCE			
3	4	5	6	7	8	
Tilt leg	Tilt lid	Detachable base	Performance score (%)	Convenience score (%)	Overall score (%)	Brand/model (in rank order)
✓ (plastic)		✓	61	73	67	**SUNBEAM** FP242 Super Deep
			60	73	66	**KAMBROOK** KD66 Multi Steamer equal
			57	75	66	**BLACK & DECKER** AF93 Super Large
		✓	59	70	65	**SUNBEAM** FP241 Super Clean
✓ (plastic)	✓ (4 positions)		56	73	64	**SUNBEAM** FP234 Gourmet
			64	60	62	**BLACK & DECKER** AF90 Traditional
		✓	56	58	57	**SUNBEAM** FP220 Classic
						NOT RECOMMENDED
✓ (metal)	✓ (1 position)		66	73	69	**BLACK & DECKER** AF94 Extra Deep
			62	73	67	**BLACK & DECKER** AF91 Electric
✓ (metal)	✓ (1 position)		45	78	61	**KITCHENMASTER** AF80

also under the lid handle, but is controlled by rotating the lid handle. Again raised symbols are used.

The **SUNBEAM** vents are midway between the lid handle and the edge of the lid, controlled by rotating a metal flap with a small lever. While this simple design makes it very easy to see whether the vent is open or closed, it's easy to burn your fingers on the hot metal lever or with escaping steam if you're not careful.

1 SIZE: EXTRA LARGE/DEEP

The standard 11-inch (280 mm) frypan is large enough for most purposes, but extra-large pans such as the 12-inch (305 mm) **BLACK & DECKER AF93** (and the similar-sized **KAMBROOK** and **SUNBEAM** models we didn't test) offer a little greater capacity. In practice this translates into slightly more room for the vegetables in a roast, or one or two more pieces of vegetable. The extra depth of the **BLACK & DECKER AF94** and **SUNBEAM FP242** is useful for large cuts of meat, stews and casseroles or if deep frying.

2 MATERIAL AND COATINGS

Several pans had Teflon 2 or SilverStone non-stick coatings, both manufactured by Du Pont. These are applied to the inside — and sometimes the outside — of the aluminium or stainless steel base, and allow cooking with the addition of very little (or no) fat or oil. Teflon 2 has two layers; SilverStone has three, with claimed improved durability, although our tests couldn't verify this.

Regardless of the coating used, a small amount of oil is needed to condition the frypan before use, and after being cleaned in a dishwasher.

3 TILT LEG

This is a folding leg mounted at the base of the heat control socket to tilt the pan away from the user, allowing excess fat to drain when roasting. This makes basting easier.

The metal leg on the **BLACK & DECKER AF94** and **KITCHENMASTER** is useless. It becomes very hot in use and is also difficult to push down without touching the hot heat control. After only a little use the legs on the two units would not latch down firmly, and would fold up if the pan was moved or bumped even slightly, possibly causing hot liquid to splash out. The final negative point is that even when in place, the drain angle was found to be too shallow to effectively collect basting juices.

In contrast the plastic leg on the **SUNBEAM FP242** and **FP234** stayed relatively cool, could be used without risking a burn, stayed down when folded down, and tilted the pan sufficiently to be effective.

4 TILT LID

On three frypans a plastic attachment on the lid can be hooked under the handle to hold the lid at an angle, useful to avoid splatter if frying.

The tilt lid feature of the **BLACK & DECKER AF94** was a little difficult to engage, and the lid easily dislodged if the pan was bumped. That of the **KITCHENMASTER**, with an identical lid but slightly different handle and pan construction, engaged easily and securely, as did the **SUNBEAM FP234's.**

5 DETACHABLE BASE

The **SUNBEAM FP220, FP241** and **FP242** have a detachable base — a one-piece plastic cradle with handles, secured by a large finger-operated knob on the underside of the pan. It is easy to remove to make the pan less bulky and more easily cleaned; replacement is also easy. The **SUNBEAM FP234** has a fixed base of dishwasher-safe plastic.

6 PERFORMANCE

Our performance testing made up 50% of the overall score and comprised:

- Thermostat accuracy: 10%.
- Evenness of heating: 10%.
- The results of the cooking tests: 30%.

7 CONVENIENCE

Convenience was the other 50% of the overall score and was judged according to:

- Ease of use: 25%.
- Ease of cleaning: 25%.

8 OVERALL SCORE

Performance (including cooking) and convenience each made up half of the overall score. However, in order for a pan to be recommended the basic features, such as the tilt leg and tilt lid, had to work adequately, and the non-stick coatings could be only minimally affected by the cooking.

The three frypans not recommended failed to meet some or all of these criteria; see *Profiles* for details.

LETTERS

Send your letters to **CHOICE, 57 Carrington Road, Marrickville 2204**. Where possible, please include your daytime telephone number, as we may wish to contact you direct for more information or to discuss your comments and queries.

FIVE-MINUTE FIRE

I am writing in relation to the article *After the storm* (CHOICE, March 1992). An emergency situation can be a frightening and confusing time for some, a logical sequence of events for others.

Most of the article consists of important information and helpful advice, but I feel you should be taken to issue about the advice given in the case of fire. The article states that if a fire starts and you cannot extinguish it in five minutes, *then* call the Fire Brigade. But there is a good chance that after five minutes you will have a catastrophe on your hands. I wonder who CHOICE consulted to arrive at this figure? Fire could engulf the room in as little as three or four minutes. Whilst some very minor cases might be handled by the occupants, you would have to act coolly and calmly in normal situations. This article is dealing with roof tiles blowing off, ceilings filling with water, windows blowing in — hardly calm, normal situations in which to perform dangerous tasks such as extinguishing a fire. Also, a fire will inevitably involve or affect electrical equipment, wiring and possibly gas appliances.

As a professional firefighter I feel the advice given under the heading of *Emergency* is ill directed and too sweeping, especially in the context of the article. Whilst you advise dealing with the experts when confronted with electrical faults and gas leaks, I also believe that fire fighting should be handled by the experts as soon as possible. Five minutes could be too late.

M Connellan
Jannali, NSW

Our information came from a pamphlet issued by the NSW Board of Fire Commissioners. It includes the advice "If you ever find yourself having to fight a fire and you can't control it within about five minutes — leave it and obtain help." Earlier in the same list of advice were the words: "You could be the person to discover a fire! Telephone the Fire Brigade ***immediately****. Never presume that someone else has called the Brigade." We read this as meaning primarily not to assume a fire has already been reported, not as advice to call the Fire Brigade immediately for* ***any*** *fire, so we reproduced the 'five minutes' advice as being more generally applicable.*

However, this is not the only letter we received questioning this recommendation, so we take this opportunity to point out that if you have any doubts at all about your ability to deal with a fire immediately call the Fire Brigade.

CRASH HOT

I was pleased to see an article on the important issue of vehicle occupant protection in your November 1991 issue (*Are you ready for the big crash?*). The article gave some indication of the work being done by the Commonwealth Government in this area, but I take issue with the slant which marred some sections of it.

First, any concern that the federal crash testing program is some form of token gesture is completely unfounded. The crash tests are part of a major research program, totalling almost one million dollars, which is expected to lead to important changes to the Australian Design Rules covering car safety.

This program includes research on side and offset crashes, laboratory tests on a range of new technologies, and studies of the costs and effectiveness of different options. It builds on the major federally funded study of occupant injuries in real crashes, published last year.

Secondly, the article implied that the federal testing program duplicates another vehicle testing program being developed by some states. The planned state testing program is intended as a long-term project, to provide information to consumers about which cars are safest. The federal program focuses directly on the development of mandatory vehicle safety standards for all new cars.

Finally, I was surprised that an organisation such as CHOICE should appear to take issue with the Government's decision to look carefully at the cost-effectiveness of different options. The Commonwealth Government is determined to ensure all Australians have access to affordable improved car safety — not just a small minority who can afford safety at almost any price.

B Brown
Minister for Land Transport
Canberra, ACT

Since this letter was written, a new draft Australian Design Rule has been released by Bob Brown and — despite our reservations about the testing, and how the balance between cost-effectiveness and safety would be met — we like the result so far. Look out for more details in ***Drivelines*** *next month.*

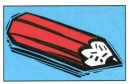
SAFE AS SUNNIES

In the February 1992 issue of CHOICE there is an article headed *Safe Sunnies* which alerts readers to the desirability of sunglasses and broad-brimmed hats for those who have a high exposure to solar radiation.

Regrettably you may have confused your readers with the statement: "Look for sunnies with an EPF factor of 10 or which claim to absorb at least 95% ultraviolet radiation." The EPF factor has not been widely accepted and indeed a working committee of the Standards Australia Sunglasses Committee agreed that the factor would not be a good way of communicating the UV absorption of sunglasses and recommended it should not be incorporated in the Australian Standard. Claims of 90% or 100% UV absorption can be misleading unless there is agreement on how it is measured and what is taken to be the UV band.

You are rather dismissive of the Australian Sunglasses Standard with the phrase, "At least buy a pair which meets the Australian Standard." The Australian Standard requires general-purpose sunglasses to absorb at least 99% of the erythemal UV and to absorb UV at least to the extent the sunglasses absorb visible light. Sunglasses sold in Australia are required by law to meet this standard.

B Cole
Chairman SAA Committee CS/53



WHAT DO YOU KNOW?

1 Until Jeannette McHugh recently took over the job, Senator Michael Tate was the Commonwealth Minister for Consumer Affairs for nearly eight years, longer than any other current consumer affairs minister in the country.
True or false?

2 Car air conditioning should be operated only when necessary to prevent chlorofluorocarbons (CFCs) escaping into the atmosphere.
True or false?

3 A container of re-refined motor oil can have as little as 30% oil that has actually been re-refined.
True or false?

4 Women who are breastfeeding should try to increase their calcium intake.
True or false?

5 The Commonwealth Government has introduced new product liability laws that make the manufacturer responsible for proving that a product is *not* defective rather than the consumer having to prove that it is.
True or false?

6 Life insurance agents must be registered with the Insurance and Superannuation Commission to practise.
True or false?

7 Signs stating 'No refunds' are illegal under the Trade Practices Act.
True or false?

8 The number of insects, spiders and mites known to be pesticide-resistant increased from seven to 447 between 1938 and 1984.
True or false?

ANSWERS

1. False. Tate only came into the job in 1990, and in fact the current longest-serving consumer affairs minister in the country, Yvonne Henderson (WA), has only been in the job since February 1989.
2. False. CFC leakage is more likely to occur if the air conditioning *isn't* operated for at least 10 minutes a week, even in winter, to prevent the seals drying out.
3. True
4. True
5. False. It backed down from this proposal at the last minute.
6. False, but they must have an agency agreement with the insurance company before they can act as its representative.
7. True
8. True

RECALLS AND BANS

If you find a recall or ban not on our list, please let us know.

Action Trampolines & Gymnastic Equipment has recalled its **SWING SEATS FROM PLAYGYM SWING SET** (red swing seats only) as the red plastic seat fades to a white colour, becomes brittle and could break during use. Discontinue use and arrange seat replacement by contacting the company on (02) 756 1022 (NSW) or (07) 390 5111 (elsewhere).

Swann Electronics has recalled **SWANN NITELITE** and **TOBIN SUPER-BRIGHT NITELITE** as the cover may detach easily from the base, which becomes an electrical hazard. Check your **NITELITE** by removing from power point, holding the pins and pulling cover firmly. If the cover separates, return to retailer for replacement.

Herbal Supplies has recalled **HILDE HEMMES' STINGING NETTLE LEAF** (all batches) as testing has shown the presence of foreign matter of animal origin. As this may present a health risk, do not use. Return to retailer for credit.

Equine Science Distributions has recalled **THE NEW-DERBY JOCKEY HELMET MODEL DD** with full terry-towelling comfort lining (date of manufacture December 1989 to June 1991) as continued use in extreme conditions may lead to corrosion of the rivets holding the harness to the shell. Corrosion may not be visible from the outside. Return helmet to your racing supplier for inspection or contact Equine Science Distributions on (03) 330 3448.

CA Toys has recalled 9 cm **CA TOYS WHITE SEAL TOY** (made 1990 and sold in SA during 1990 and 1991) as one eye may come loose due to a cracked washer, presenting an ingestion hazard to young children. Return by reply-paid post to Reply Paid, BRP No 012, CA Australia Pty Ltd, PO Box 525, Brookvale 2100, for replacement.

McKay Australia has recalled **MCKAY TUBELESS STEEL DISC WHEEL ASSEMBLIES** (purchased since 1/1/92), **MCKAY DEMOUNTABLE 9.00 x 22.5 FRONTRUNNER WHEEL RIMS** (delivered as rims or fitted to trucks since 1/1/92), and **MCKAY DEMOUNTABLE 8.25 x 22.5 FRONTRUNNER WHEEL RIMS** (delivered as rims or fitted to trucks since 1/11/91) as a weld may separate, leading to loss of control of the vehicle. Identification number ranges are NN 335 91 to NN 365 91 and NN 001 92 to NN 132 92 (where NN stands for any two-digit number). Take vehicle to nearest Beaurepaires for Tyres service centre for examination and, if necessary, replacement of parts. For information contact McKay on 008 803 664.

Berrivale Orchards has recalled in WA two-litre plastic bottles of **BERRI APPLE AND BLACKCURRANT CORDIAL** (use-by date 26 March, 1993) as it was accidentally contaminated with excessive amounts of sodium metabisulphite. Do not drink. Do not open pack if you are asthmatic. Return to retailer for refund.

DOLE CALIFORNIA DATES in 250 g packs (use-by date 12/93) have been recalled as packs have been found infested with larvae and dead insects. Return to retailer.

PLEASE SEND US

■change of address ■ renewal
■subscription inquiries
Just write to: **The Subscription Section Australian Consumers' Association 57 Carrington Road, Marrickville 2204.** or phone **(02) 558 8088**

TWELVE MONTH INDEX

SEPTEMBER 1991 — AUGUST 1992

(T) test
(D) includes assessment of suitability for those with disabilities
(F) feature — general advice
(M) feature — includes market information
(S) subscriber survey or user trial
(C) Consumer in law
(L) letter
(U) update of previous report
*** additions or corrections to reports**

Abattoirs Jun(F)
Aluminium in the diet Jan(F),Apr*
Annuities Mar(F)
Anti-discrimination legislation Jan(C)
Audio equipment
  buying hifi components Apr(F)
  car radio/cassette players Jun(T)
  personal stereos Dec(T,D)
Bar refrigerators Sep(T,D)
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  insurance Feb(M)
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Evaporative coolers Oct(T,D)
Exterior house paint Feb(T)
Fans, Mistral Apr(C)
Fax machines Jan(T)
Food
  canned, drained weight Aug(T)
  cholesterol and oat bran Jun(F)
  fish fingers and portions Feb(T),May(L)
  irradiation of Aug(F)
  labelling Mar(F)
  salmonella in chicken Oct(T)
  soy drinks Apr(T)
  sugar in Apr(F)
Frypans, electric Aug(T)
Gas heater, Mod-n-Aire Jul(F)
Gas heaters, unflued Apr(T,D)
'Generic' and national brands Aug(F)
Goods and services tax Jul(F)
'Green' supermarkets Oct(M)
Heat guns Feb(T,D)
Heaters, gas unflued Apr(T,D)
Hifi
  buying components Apr(F)
  VCRs Oct(T,D)
Holidays, last-minute Dec(F)
Home cladding Sep(M),Mar(U)
Hormone replacement therapy May(F)
Household energy use May(F)
Insolvency, business Mar(C)
Insurance
  agents and brokers Feb(F),May(L),Jun(L)
  car Feb(M)
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Investment, ethical Sep(M)
Irons Mar(T,D)
Irradiation of food Aug(F)
Kettles, cordless Dec(T,D)
Laundry detergents, 'green' Sep(T)
Lawnmowers, electric & push
  Nov(T,D), Feb(U,D)
Lawyers, complaints against Jun(C)
Lost wallet, what to do Aug(C)
Meat production Jun(F)
Microwave ovens, small Jun(T,D),Aug*
Mistral fans Apr(C)
Mod-n-Aire gas heater Jul(F)
Moisturisers Dec(S)
Money for travelling May(F)
Motor oils, re-refined Dec(T)
National and 'generic' brands Aug(F)
Network selling Jul(F)
Oat bran Jun(F)
Orbital sanders Jun(T)
Ozone layer Aug(F)
Packaging, 'green' Jun(F)
Paint, exterior house Feb(T)
Personal stereos Dec(T,D)
Pest inspections May(F),Jul(L)
Phones, cellular Jul(T,D)
Playground equipment Feb(F)
Premenstrual syndrome Oct(F)
Product liability Sep(C)
Refrigerators
  bar Sep(T,D)
  medium-sized Mar(T),May(L)
Reliability survey, cars Aug(S)
Retirement villages May(F)
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Selling techniques Oct(F)
Sewing machines, computerised Sep(T,U)
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Smoke detectors Feb(M)
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Steering wheel locks May(T,D)
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Supermarkets, 'green' Oct(M)
Tampons Apr(T)
Tax, goods and services Jul(F)
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Toy safety Nov(F)
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Travel money May(F)
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Video equipment
  TVs, medium-sized Jul(T,D)
  VCRs, hifi Oct(T,D)
Washing machines Nov(T,D),Feb*
Water, bottled Jan(T),Feb*
Wallet, if you lose Aug(C)

ISSN 0009 496X Registered by Australia Post — publication No NBQ 0301
Wholly printed in Australia by Wilke Color, 37–49 Browns Road, Clayton 3168 in 1992 for the publisher, Australian Consumers' Association, 57 Carrington Road, Marrickville 2204.